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PRACTICAL OBSERVATIONS

ON

THE ACTION

OF

MORBID SYMPATHIES;

AS INCLUDED IN

THE PATHOLOGY OF CERTAIN DISEASES;

IN

A SERIES OF LETTERS TO HIS SON,

ON HIS LEAVING THE UNIVERSITY OF EDINBURGH,

IN THE YEAR 1809.

BY

ANDREW WILSON, M.D.

KELSO.

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PRACITICAL OBSERVATIONS

ON

THE ACTION

OF THE

THE PATHOLOGY OF CERTAIN DISEASES

THE PATHOLOGY OF CERTAIN DISEASES



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PREFACE.

THE following Letters were originally written for the use of the Author's Son, at the time of his leaving the University. The considerations which have led to their publication it is unnecessary to explain ; it is sufficient to say, that, conscious as he himself is of the correctness of the principles which they exhibit, they having been gradually assumed in the course of many years of medical practice, he is not without hopes, that, to young men, their perusal may be useful, by helping to assist them in distinguishing with correctness many varied shades of morbid phenomena, which might otherwise es-

cape the eye of transient notice ; and to experienced practitioners, whose medical opinions have been long established, he is desirous only of offering them as subjects of candid reflection.

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LETTER I.

FEB. 7th, 1809.

DEAR —

CONSIDERING that correct views of Diagnostic Pathology are of such essential importance for the acquirement of that knowledge in your profession, which is indispensably requisite, in order to qualify you for exercising its various duties with precision and comfort to yourself, as well as with that justice which is due from you to those who may commit their health to your care, it necessarily becomes an object of your most sedulous study. It comprehends the distinguishing knowledge of those signs, by which you can discover in what region, or organ of the body, the cause

of such morbid phenomena as may be under your immediate inspection is seated, as well as the nature of that cause itself. The subject is still enveloped in considerable obscurity ; but you will take notice, that in those cases where this knowledge is either not possessed or not applied, all medical practice is nothing more than mere empiricism.

Having nearly finished your studies in a medical school, so justly held in the highest estimation, and celebrated for the most eminent teachers, you must now in no long time leave it, and enter on the public exercise of your profession ; I am therefore desirous, notwithstanding the advantages which you have enjoyed, of lending you, at this period, such additional aid as I conceive to be in my power, and such as my long experience may afford you, by committing to paper, in an occasional correspondence, my thoughts on certain medical subjects.

I do not intend to remark on the speculations, either of ancient or modern times, respecting the many theories of disease, which have in succession existed, which have been received for a time even with a degree of superstitious credulity, and which have in succession been again neglected.

I only intend to lay before you such opinions, on some Pathological Subjects, as observation and reflection have led me to entertain, and to point them out to you as not unworthy of your serious and particular attention; flattering myself that the study and application of the principles on which they are formed will, in your future practice, serve greatly to dispel from your mind a cloud of visionary theory, and uncertain inference, so commonly to be met with in medical writings, and in medical language. At any rate, you will at least have it in your power to compare and balance them against the opi-

nions of others at your leisure, and that exercise itself may lead you to some useful practical conclusions.

In perusing medical tracts, you will have to encounter much indefinite language ; you will meet with numberless phrases, which are in reality expressive of no directly defined idea ; you will also discover that this defect has diffused itself insensibly through all the various medical theories which past ages have presented ; and likewise that the present day is not less fertile in these vague speculations and indefinite modes of expression than former times have been.—An uncertainty with respect to many of the inferences drawn in the medical branch of physics, is a thing even proverbial ; and the truth is, that the observation is too well founded, especially respecting inferences drawn from observation and experience alone, unsupported by any physical principle.—The occasional bias of ob-

servers on the one hand; and on the other, the variously combining circumstances which may unite in producing the same result; together with the difficulty of attributing a morbid phenomenon to its true cause, have allowed a great degree of obscurity still to rest on such conclusions as are derived from this source alone; and the evil has been increased, from men of genius, who have published on the subject, loading their dissertations with statements erected on visionary grounds, and crowded with technical language, derived, if not altogether, at least in a great measure, from their own fanciful conceptions.

This misfortune appears to originate from the paucity of unvarying data in diagnostic pathology, data which are amenable to the inspection of the senses, and upon which synthetic conclusions can with certainty be founded; consequently it has happened, that much has thereby

been left open to conjecture, and has proved the fertile source of visionary theories, tending more to amuse the fancy, than improve the judgment. Yet such steady principles I conceive are by no means entirely wanting, principles which, being inherent in the living body, are always present either in real action, or else ready to be called into action. This is very observable in the well known laws of that general sympathy inherent in the whole nervous system ; as is demonstrated by the fact, that an injury offered to any part of that system can communicate a morbid sensation either to the whole, or to some individual distant organ, in which the nervous influence is otherwise at the time supporting a state of health. The study of the operation of its laws, therefore, is a matter of great importance, and their action being often very demonstrable to the senses, may be reasoned on in diagnostics with the utmost propri-

ty, and considered as steady principles to be acted upon. For instance, it is certainly known that the irritation of calculi in the kidney or ureter, will by morbid sympathy produce nausea: But this being ascertained as a fact, when on any occasion a stomach nausea is observed, without the ordinary signs of gastric load, but attended with pain and uneasiness in the urinary organs, reasoning on the above fact, the conclusion is, that the primary disease is seated there. Again, we know that certain irritating matter contained in the stomach, will very commonly produce a headach; but knowing also the universal influence which the stomach exercises over the whole human frame, if a person becomes affected with pain, &c. in a distant part of the body, in a limb, for instance, without any occasional cause having been applied, attended at the same time with certain signs of a loaded stomach; reasoning from the above facts,

we readily believe that if irritation in the stomach can produce pain in the forehead, it may at any other time produce pain in any other distant part also. It is a fair enough inference, therefore, that in this case likewise the primary disease is seated in the stomach, and is a cause of pain in the limb by an act of morbid sympathy.

Placed by the Creator as a medium of connection betwixt the living principle, and the mere mechanical part of the human body, the nervous fabric, consisting of the brain and its appendages, constitutes a most important field of attention, with respect to their modes of action; with regard both to their correct operation, as the moving power of the machine in a state of health, and to the infinitely varied shades of their morbid action, exhibited in the phenomena of disease; and in fact, it is in the varied degrees and forms of these phenomena, which the excessive or uninterrupted action of

the nervous power creates in the frame throughout the whole progress of its decline from a state of perfect health to absolute death, that we observe all the variety of morbid appearances (especially those arising from internal causes) which pathology presents.—A prevailing preconceived opinion, that the secret causes which are capable of giving so much misery and morbidity to man, must necessarily be deeply seated in the animal machine, together with the theories which have been formed through this previous impression, appears to have proved a powerful cause of much oversight in the search of truth. The extraordinary as well as general bias to the impressions of empiricism also, has always contributed not a little, even in cultivated minds, to render the mist of diagnostic medicine darker and more impenetrable. That the causes of disease do often lie far concealed from the eye of a professional ob-

server is very certain ; but still there exist many forms of disease, the causes of which, though not absolutely to be discovered by the sight or touch, yet are of a nature which may be ascertained with much precision ;—causes which, although they may even elude the research of anatomical inspection after death, are still, as to their nature and their existence, capable of being discovered, by means of a minute knowledge, and careful detection of the action of those laws by which the living system is moved and regulated. The uncertainty attending those inferences which are drawn merely from experience, and observation of certain effects having occurred, without being attended by any rational demonstration connecting these effects with a cause, is necessarily very great ; but when the power of such direct demonstration is really unacquirable, which very frequently happens in medical phenomena, then the grounds of opi-

nion which approach nearest to it, claim a primary regard. Of this nature are those conclusions which are formed in consequence of our having first seen an effect produced, and then, by a fair and unbiased induction, having been led up to a cause of that effect ; but when this principle of theory, as being founded in consistency with known facts, is afterwards found to explain, in a simple and satisfactory manner, a varied system of phenomena, your conclusions may then be very fairly considered as just.

The existence of the law of general sympathy, which is inherent in the animal economy, has long been known and taught in the physiological schools ; and many also are the specific sympathies of one individual organ of the body with another, which have been remarked to exist during a state of health. But it is the exercise of this law, in its extensive and various forms, under a diseased state of the

system, to which I propose chiefly to lead your attention, as affording a satisfactory explanation of many morbid appearances, the nature of which, I am led to think, cannot be demonstrated so clearly, nor so intelligibly, on any other ground. It may be said, that the existence of life and health depends as certainly on the muscular action of the heart and arteries, as upon the action of the brain and nerves ; but the difference consists in this : The heart while in action preserves the whole machine in motion ; but it is the nervous influence which keeps the heart moving ; and when death ensues from an organic disease of the heart, it is an effect similar to the fracture of the principal wheel of a complex machine. But abstraction or defect of the nervous influence, is like an abstraction or defect of the machine's moving power, which power, in the human machine, is exercised not merely over the heart and its appendages, but is

directly applied to every individual organ and fibre of the body. I must here pause at present.

LETTER II.

DEAR —

WHEN the healthy operation of any organ of the body is interrupted by an injury received either in its structure, or in the moving power, there necessarily occurs some imperfection in the action of that department of the system wherein the diseased organ is destined to perform a part. This interruption, as well as its cause, is sometimes cognizable by the senses, but it also very often happens, that both the one and the other lie so far concealed, that, while it is evident a disease somewhere exists, yet its nature, as well as the seat of the defect, is only to be guessed at by the aid of observation and of certain signs.

In investigating the true seats and causes of many of the morbid phenomena, the operation of the general laws of sympathy inherent in the nervous system forms an important field of observation ; and although their study has been but little introduced into pathological reasoning, yet be assured that the subject merits the most serious attention from the practical physician, numerous being the errors, or rather the misconceptions, which daily occur from mistaking what is only the sign or effect of an existing cause, for the essence of the disease itself. Many and various are the cases of morbid sympathy induced in the mass of disease, to which the human body is subject, and not a few of these are of so important and formidable a nature, as to constitute, in fact, some of the most painful forms of human distress ; for which reason I wish to point them out to your notice, as objects deserving your peculiar

attention and study. I have remarked to you in the preceding letter, that one material reason for that uncertainty which remains suspended over diagnostic pathology, is derived from the want of fixed data, or such ascertained principles, as by fair reasoning should lead to correct inferences ; I have also observed, that, where such direct demonstration is unattainable, recourse must be had to those sources of opinion which may approach nearest to it.

It is unnecessary for me to go over those grounds upon which I have founded the views I am now presenting to you ; it is enough to say, that professional attentions have led me to think, that, in the general law of sympathy, principles are very evident, which approach so nearly to axioms, that in practice they may be very justly acted on with confidence.

The brain, and its appendages of

nerves, being that medium through which the living principle acts upon the otherwise inert organic structure ; as also the medium through which the mind is made conscious of injurious applications offered to any part of the machine. It may properly be said, that every part of the human body is capable of sympathising with the rest ; because we see, that no part of it can admit of having the sense of feeling excited to the height of pain, without the whole frame also suffering an uneasy sensation. But there are likewise parts or organs which are more intimately connected with, and dependent on each other, than upon the rest of the body, constituting a specific or peculiar sympathetic affection. Some of these phenomena are so common, as to be noticed merely as things of course ; as, for instance, when a person is affected with head-ache, a disordered state of the stomach is at once remarked as the cause of

this, in consequence of experience having frequently shewn it to be so, affecting some membranous part of the cranium by sympathy. If a pregnant woman has nausea and vomiting, irritation in the uterus, for a similar reason, is immediately admitted as the cause of it affecting the stomach by sympathy also ; and they are readily passed over as peculiar facts, without reflecting that they are in reality instances of the exertion of a general law, which may be called into action in numberless other occasions as well as in these. It is that law of the sentient nervous system, whereby, upon certain modes of irritation being occasionally applied to some particular parts of the body, morbid sensations and morbid actions will be excited in some distant organ, and is therefore very properly designed *morbid sympathy*.

Morbid sympathetic impressions are sometimes attended with pain, and some-

times not ; in which last case, the original irritation gives only, either an increased exertion of the natural office of the sympathising organ ; or else its natural and healthy action is thereby impaired, and even sometimes totally suspended. The first is exemplified in the vascular system, when it is excited to fever by acrimonious irritation in the alimentary canal ; or by the increased secretions which take place in the liver and other abdominal glands, as also in the salivary gland, from the same cause. The second is illustrated by the power of the heart, and the whole vascular system being reduced below its natural standard ; exhibited in palpitations, languid pulse, torpors of the limbs, syncope, and even death itself, in consequence of the mere application of a peculiarly offensive substance to the nerves of the digestive organs.

At other times, the pain attending

morbid sympathy is very great, and this will greatly depend on the natural sensibility of the part or organ so affected. The most common source of sympathetic pain, seems to arise from the impression being seated, in form of spasm, on a muscular part, a portion of a muscle, or on a fibrous membrane. It appears also occasionally to occupy a nervous chord, a plexus of nerves, or a ganglion ; on which occasions the attending pain is necessarily very great. But as the medullary part of the nervous structure is possessed of no contractility, therefore, if it is supposable that a sympathetic affection is ever exclusively seated on that part of the chord, it is to be presumed that the attending pain may arise from a morbid excitement of its natural sentient principle. But although the nervous medulla has in itself no contractility, yet its membranous sheaths are possessed of muscular fibrillæ, and blood vessels like

other membranes, and therefore may be affected with sympathetic spasm, so as to influence the medullary part with painful sensations. There is reason to believe that this in fact occurs.

The natural healthy operations of muscular action, even the most severe voluntary exertions, are performed without the smallest sensation of local pain ; but when excited to involuntary spasm by some irritating morbid cause within the body, as in convulsive diseases, the attending pain becomes very severe, often excruciating. But that state of a muscle which is denominated spasm, is nothing else than an excessive exertion of its natural contractile power, to which it is capable of being excited by morbid irritation, applied either directly to the muscle itself, or indirectly by an action of morbid sympathy, arising from irritation applied to a distant part of the nervous system. Wherever, therefore, muscular fibres ex-

ist, morbid spasm may also exist ; consequently, not only the fibres of large muscles, but the smallest fibrous threads of all the membranous parts, are also susceptible of spasm from irritation, applied either directly or indirectly from morbid sympathy ; and hence, spasm, when fixed in the fibres of a membrane by sympathetic affinity, may be productive of painful sensations, as naturally as when seated in the fibres of a large muscle.

It is farther to be observed, that although the most violent spasms of large muscles are seldom, if ever, succeeded by local inflammation, as is instanced in epilepsy, hysteria, &c., yet when the muscular texture of a membrane becomes the seat of a sympathetic spasm, local inflammation of that membrane is speedily induced, the coats of its capillary vessels being probably also soon included in the sympathetic influence. Give

your particular attention to this circumstance, because, from this fact, that inflammation in a membrane speedily follows, as the consequence of sympathetic spasm formed in it, certain important phenomena in the pathology of inflammatory diseases are derived. Instances of this frequently occur in spasm of the intestines, and are often exhibited to the eye-sight in periodical headache, more especially if the periodical sympathetic pain extends to the membranes of the eye. I have in that case observed the adnata become regularly inflamed during the continuance of the fit, disappearing gradually in time of the intermission, and returning again with the returning paroxysm ; at other times, on such occasions, the inflammation is more permanent, and establishes a most distressing form of ophthalmia.

Here then we have a certain number of pathological facts, which must be ad-

mitted as data to be reasoned from, because their existence is demonstrably true, and I believe are as certainly so as any axiom in geometry.—1st, Irritation applied to certain parts of the body, can excite painful sensations, and morbid action in a distant organ, by the operation of the law of sympathy inherent in the nervous system ; this frequently occurring while the mind remains unconscious of any uneasy feelings at the place where the irritation is applied. 2d, Morbid sympathies are sometimes attended with pain, and sometimes not. In the latter case, the morbid effect consists either merely of an augmented action of the natural powers of the sympathising organ, or else, as happens at other times, the natural healthy powers of the organ are thereby impaired. But when an action of morbid sympathy rises to the height of exciting involuntary spasm in a muscle, in a portion of a muscle, or in the

fibrous texture of a membrane, it is uniformly attended with more or less of painful sensations in the sympathizing organ, and there, occasionally, in a severe degree.

3d, When a membrane is the seat of sympathetic spasm, the circulation in that membrane is frequently influenced in such a manner as speedily to produce inflammation, more especially in those of a firm texture. In contemplating the exhibition of morbid sympathies, you must take notice, that they vary much in their form and appearances ; that the original irritating cause will at one time produce a single peculiar sympathy only ; and at another time will give a number of sympathizing affections, occupying several organs of the body at the same time, and all of these appearing to flow from the same source ; as, for instance, the many forms of uneasy sensation which can be traced, as resulting at one and the same time from vitiated fluids contained in the stomach.

Upon other occasions, the effects of the primary cause are progressive, and the first sympathetic affection will produce a second depending upon it, and this again will give a third in like manner; and so on in a series of morbid sympathies flowing in succession from each other, and exhibiting morbid appearances peculiar to the organs included in the climax. This is demonstrated when irritation is excited in the kidneys or bladder by a stone or gravel; or in the uterus in some forms of hystéria, and in the case of pregnant women; which organs have a peculiar sympathetic affinity with the stomach and intestines. But the stomach again readily communicates its morbid influence to the head; and there, if the morbid sympathy shall be seated within the cranium, there is no organ or function which may not be included in the circle; the whole phenomena at the same time depending on the primary ir-

ritation subsisting in the urinary organs or uterus.—And further, you must observe, that the painful sympathetic spasm very often shifts its seat ; which appears to be the effect of some unperceived natural cause ; or, as sometimes happens, from the agency of a medical application made to the parts. But the original cause of irritation still remaining in action, the effect of that cause merely changes its place to some other organ, which may stand next in rank of affinity to the primary cause, and soon to a third perhaps, or even return to the first, as circumstances attending the original cause may determine ; but this will appear more forcibly to you, in considering the sympathetic phenomena of certain diseases afterwards. With regard to the vinculum, connecting the sympathising part with that where the irritation is applied, we remain totally in the dark ; all that we have in our power, on this point, is to ob-

serve, and by careful observation to mark, demonstrable facts ; and these, by candid induction, ought to lead to correct practice. Neither is it known whether the communication of sympathies be direct, being established by the various subdivisions of the nervous chords, or if their communications are circuitous, always passing first to the brain, and so by the medium of the sensorium commune exhibiting these phenomena which appear in the sympathising organs. The late Dr White of Edinburgh, in his excellent work on nervous diseases, is of the latter opinion ; at the same time it appears most probable that both of these modes of action may occasionally exist.

I am, &c.

LETTER III.

DEAR —

AFTER having made the above observations, I will next proceed to make some remarks on such morbid sympathies as are conspicuous, either in the course of certain particular diseases, or which, at other times, form the principal phenomena of the diseases themselves.

That extensive and varying influence which a healthy or diseased state of the digestive organs, and of the stomach in particular, exercises over the whole human frame, both of body and mind, has long been the observation of pathologists, and of course it constitutes an object of the deepest importance to the physician, to become well acquainted

with the extent to which this influence reaches, as well as the laws by which it is governed ; in order that he may thereby be enabled to correct the operation of these laws, when they are called into action in a manner inconsistent with health.

When we take into consideration the extensive surface furnished with innumerable papillæ, that is, the extremities of sentient nerves, which the stomach and intestinal canal constantly present to the variety of irritating matters which is daily poured into them from the combined sources of extraneous articles of food, and the occasional morbidity of their natural secretions, it is no way surprising that the primæ viæ are observed to be that part of the system where we meet most frequently with these primary irritations which are productive of the diseased appearances alluded to. The morbid sympathies which subsist betwixt the stomach and certain distant parts are

no doubt reciprocal ; but it is observable, that the sympathetic affinity in these parts, flowing from irritation in the stomach, &c. are far stronger and more direct than those which affect the stomach from a distant origin. Upon the whole, however, the great object in practice is not so much to determine the specific form of the sympathetic affection, as to decide whether the morbid phenomenon presenting itself is really sympathetic, depending upon affinity with irritation in some distant part ; or whether it be idiopathic, and the effect of a primary local derangement in the organ where the pain or uneasy sensations are seated ; or whether it proceed from both of these causes acting together. It is further to be noticed, that, in contemplating the pathology of sympathetic diseases, the various idiosyncrasies of constitution, whereby an individual may become violently influenced by particular

irritating causes, which, if applied to another, or to a hundred others, would produce little, or perhaps no effect whatever, constitute a fact of the most important consideration in explaining many of their phenomena. I wish you again to remark, that although spasm in the large muscles, or in a portion of the fibres of large muscles, be not followed with any inflammatory affection, or a febrile state arising from that cause, yet when the sympathetic spasm takes place in membranes lining cavities, or on membranous ligaments, as the membrane of the fauces, the trachea, and bronchæ of the lungs ; the pleura or peritoneum, or coats of the intestines, and membranes surrounding the glands ; as also the ligaments of the joints, and tendinous aponeuroses, inflammation on the part is very frequently the consequence ; and in consequence of this local inflammation drawing the whole vascular system

and heart into increased action by morbid sympathy, a febrile state is produced. But spasm does not appear to operate as a direct cause of pyrexia of itself, till it has in the first place induced local inflammation. It is therefore probable that the stricture on the skin, which accompanies feverish paroxysm, is no cause of fever, but merely a morbid sympathy depending on irritation, applied to some distant part of the body, most commonly within the intestinal canal; and, moreover, it is often observed to exist without a quickened circulation. On the other hand, from the affinity which subsists betwixt the surface of the body and the intestinal canal, as well as the glandular system connected with it, it so happens, that when the general perspiration is checked by some external occasional cause, as, for instance, by the application of cold, the natural secretions into the cavity of that canal are all increased,

which secretions, when permitted to remain there, so as to become acrid, re-act again upon the system, and become the cause of disease.

Having premised thus far respecting the general laws of morbid sympathy, I will now go on to offer to your attention some observations on the operation of these laws, as exhibited in the phenomena of certain diseases; and here I wish to remark to you once for all, that with regard to the practical use of systems of nosology, notwithstanding the specious hope of utility in diagnostic pathology, which classification holds out, it has not in reality proved materially useful in that department of medical science. The reason is, that what are styled definitions of diseases, communicate little more than an enumeration of certain phenomena which mark a departure from health, and the causes of which remain afterwards to be discover-

ed, in place of being what, if possible, it certainly ought to be made, a climax of circumstances ; which, step by step, shall open to your view the complete fabric of disease, directing you to its source. You will therefore find, that nosological arrangements are all artificial structures ; whereas the phenomena of morbid sympathies, in so far as they form the origin of disease, are all the operation of natural causes, and are very generally to be traced to their primary sources of action ; and, upon the whole, you will see that nosological classification is as yet very deficient, and, as it now stands, may be a most useful statement for the purposes of a public teacher, but is entirely useless, in diagnostic pathology, to a practitioner. This defect ensues from the difficulty which occurs in ascertaining with precision to which class, order, and genus, the particular instance of disease which you are investigating ought to be referred.

I shall therefore, in what I mean to say to you, pass from the form of nosological method, and merely detail what long experience has pointed out to my understanding as the only tenable ground on which the nature of a numerous class of diseases appears to be intelligible ; in fact, the operations of the laws of sympathy, through the nervous influence on the living system, is a thing demonstrable to the senses ; and any theories which I have ventured to offer on their pathology, are very nearly as much so, to an unbiassed mind. At least this I will assert for myself, that to my conception they approach far nearer to the certainty of demonstration, than any other pathology I have met with on the same subjects, and have served to direct my own practice, in a satisfactory manner, through a mist of insulated facts and general assertions ; while every additional year's experience has served

more and more to strengthen my opinions.

Thinking it unnecessary to enter on a statement of the various hypotheses which the history of medicine has presented, I wish exclusively to direct your attention to the study and consideration of some morbid appearances which seem directly to arise from the action of certain laws of the animal economy that are decidedly known to exist; as also to the endeavour to trace the connection betwixt the effects of the action of these laws, and the morbid causes from which these effects proceed. Indeed, the time is mis-spent which is employed in explaining the doctrine of disease on a preconceived theory, or in trying to form a theory for the purpose of explaining the nature of a disease, in place of observing impartially the phenomena of its progress, and of trying to penetrate into the nature of its causes, with the

hope of adopting a rational practice for its removal.

A febrile state of the body is perhaps the most frequent of all diseases, and has at all times justly met the highest degree of consideration. In attending to the descriptions and definitions which have been delivered of it, you will readily see that they are often diffuse, and by no means expressive of a clear concise idea, but consist of the enumeration of a list of certain morbid appearances ; and that by simple fever is implied a supposed ideal something within the body, acting as an abstract principle, independent of any topical affection, but attended by a train of circumstances peculiar to itself as its effects ; such as sensation of cold, succeeded by heat, thirst, quick pulse, prostration of strength, with the impaired action of other functions, &c. That vicissitudes of cold and heat, with thirst, quick pulse, &c. are concomitants

of a febrile state, is certain ; but I believe the truth to be, that no such abstract principle as the above can be demonstrated to exist, and that a febrile state of the body is at all times the result of some primary cause applied to, and exciting to morbid action the moving powers of the system. If you will consider every account which has been given respecting the attending phenomena of a febrile state, you will directly discover that there is one only of these symptoms which invariably occurs, and which is always present from beginning to end, viz. an increased action of the heart and arteries. This circumstance is one which forms a *sine qua non* in fever, seeing all the other circumstances included in the description of pyrexia may also exist without, and independent of, a quickened circulation, and of course do not of themselves necessarily exhibit a febrile state of the body. You will at

the same time remark, that the merely accelerated circulation of the fluids, which is the result of voluntary muscular motion alone, is not a state of pyrexia ; this last being always understood to be the effect of peculiar causes internally applied to the moving principle of the machine.

That department of the machine, then, to which such exciting causes are applied, and through which these morbid appearances are exhibited, as well as the laws of its action, come naturally to be points of interesting deliberation, in reflecting upon this important disease.

I am yours, &c.

LETTER IV.

DEAR —

I am very solicitous to impress the following view of febrile diseases on your notice, as meriting your careful attention. I wish you to compare it with what you have read on the subject ; and if it shall prove useful to you in rendering your ideas of fever less complex, they will in proportion become more clear, and will enable you to proceed with greater firmness and decision in practice.

You will remember then, that a febrile state, or a permanent increased action of the heart and arteries, may be derived either from irritation applied to the nerves of some distant part of the body, between which and the vascular system

a primary affinity subsists, exciting that system into violent action by morbid sympathy ; or from the effects of something of an irritating nature having been received into, and circulating with the blood, and thereby directly applied to the internal surface of the heart and blood vessels themselves. But the establishment of a febrile state of the system, as derived from remote causes within the body, appears very demonstrably to acknowledge the following primary distinctions :

1st, As derived from the effects of acrid matter applied to some department of the nervous system, and exciting a morbid action of the heart and arteries by morbid sympathy ; but such a remote cause, experience shows, is most commonly seated in the digestive organ.

2d, As derived from the effects of irritation, arising from organic obstruction, somewhere existing in the body, and ex-

citing increased action of the heart and arteries, by morbid sympathy.

3d, As derived from the effects of something of an irritating nature received into, and circulating with the blood ; being thereby directly applied to the internal surface of the heart and arteries.

4th, As derived from passions of the mind, exciting an increased action of the vascular system, by morbid sympathy.

5th, As derived from two or more of these primary causes of fever acting at the same time.

Although any one of these causes, when applied alone, may of itself be productive of pyrexia ; yet it very frequently happens, that in consequence of certain occasional derangements occurring in the body by the operation of the first cause which is applied, one or more of the others are observed to come early into action at the same time ; thereby forming a supervening or accessory cause

of fever. The first of the above-mentioned primary causes, viz. Irritating matter applied to the nerves of the stomach and intestines, is the source of many morbid phenomena in the animal economy, as well as those of fever. But what the exciting circumstances are which determine one part of the body to be occasionally more amenable to this cause than another, is totally unknown ; only we are certain that it is so ; and that from irritation in the *primæ viæ*, the vascular system in one person shall be excited into violent action, while the muscles are remaining free from any inordinate influence. But in another person, irritation in the same organ shall be productive of violent muscular spasm, or perhaps painful sensations in some distant part of the body, while the artereous system remains undisturbed.

It is the first of these phenomena,—the effects of irritation in the *primæ viæ* up-

on the vascular system, exciting it into violent action by morbid sympathy, and as forming the primary cause of a febrile state, which I mean here to take notice of. It is one which I believe to be the most common, as well as the least complex form of fever. It is the least complex, because it most frequently depends on one uncombined cause; on which account it comes very properly to be first considered, and is best distinguished by the appellation of gastric fever. The pathology then, and attending morbid sympathies of gastric fever, I conceive to stand thus :

In consequence of certain acrimonious matter being applied to the nerves of the inner coat of the stomach and intestines, a sympathetic affinity takes place betwixt that organ and the vascular system, whereby the natural action of the heart and arteries is accelerated, and the velocity of the circulation is of course increased.

This, in the next place, is succeeded by a train of uneasy sensations resulting from the excessive action of these vessels, and a velocity in the current of the blood beyond what is consistent with health.

During a certain period of time previous to the establishment of this febrile state, a degree of departure from a healthy state of the *primæ viæ* may always be remarked ; such as impaired appetite for food, weight at the precordia and abdominal distention, thirst, parched mouth, and furred tongue ; to these are commonly added, signs of impaired and irregular action of the nervous system in general, arising from morbid sympathies with the same source in the *primæ viæ* ; such as languor, disturbed sleep, headache, dry skin, vicissitudes of heat and cold, &c., till at last the contents of the alimentary canal having increased in acrimony, *i. e.* in irritating power, a feverish paroxysm is formed, accompanied with

an aggravation of all the former complaints, together with augmented heat of the whole body.

In this species of fever, no poisonous effluvia have been received into the body; and the first signs of any departure from health, are all of that kind which point out impaired action, and morbid irritation in the digestive organs. In these organs, then, we may very reasonably expect to discover the cause of the evil, or remote cause of the disease; a cause, which in fact has the power not only of producing the febrile state under consideration, but also of exciting a whole train of morbid sympathies, occasionally extending the operation of this law to the brain itself, to the thorax, to the glandular system, to the muscles; indeed there is no part of the frame which does not occasionally sympathise with the *primæ viæ*.

Since, then, the circumstances which

connect irritating causes with their sympathetic effects, in the animal economy, elude the cognisance of our senses as much as many other physical phenomena ; as much, for instance, as in electricity, or in the law of gravitation. We are left, as in these cases, to infer their existence by the changes which take place ; and if by experience it can be proved, that, in the disease under consideration, the whole chain of sympathies attending it have regularly disappeared, in consequence of a discharge of offensive matter from the stomach and intestines, it can no longer be doubted, nor can any farther pathological proof be required of this acrimonious matter having acted as the primary cause of the whole phenomena. This is the prevailing fever of infantine years, and when early attended to proves of short duration. It observes no defined period, but is seen to terminate as soon as its remote cause, seated

in the primæ viæ is thrown off. At the same time, this short period of duration does not universally take place, seeing that it depends so directly on an early accomplishment of the above object.

Experience, however, has shewn, that the use of the more lenient emetics and laxatives, has been but seldom attended with the accomplishment of the intention for which they were prescribed ; and that although they may give a sufficiently free discharge, yet that they do not, on that account, necessarily carry along with them the most offending contents of the canal ; and I think it is from this circumstance that the most protracted fevers I have seen, terminating at last in health, have been gastric fevers. It appears very evident, that in this disease either some temporary morbid change takes place in the healthy mobility of the nerves of the primæ viæ, or else that the contents are rendered so tenacious, as to defend the

coats from the stimulus of the milder medicines, requiring those of the most active powers to be efficient ; but be this as it may, one thing is certain, that the patient's final recovery is always attended by an offensive discharge from the *primæ viæ*.

I am, &c.

LETTER V.

DEAR —

FROM what is stated in my last letter, you will readily observe, that, in treating gastric fever, there can be only one great indication, which is, to clear away from the stomach and intestinal canal those irritating contents which constitute the remote cause of the disease.

Accompanying the accession of fever, there appears to be established, in a greater or less degree, a spasmodic stricture on the excretory vessels of the skin, and along with it, a defect of the natural quantity of perspiration ; there happens, at the same time, either an increased evolution, or a morbid retention of caloric in the system, perhaps partly of both,

raising the general temperature of the body above its healthy standard. This morbid disengagement of caloric, which more or less attends every febrile state, is observed to give great irritation and excitement to the action of the nervous system, and thereby forms an accessory cause of the continuance of fever. To lessen the quantity, and consequently the action, of which accessory cause, is a circumstance which forms here the only other necessary object of attention ; and this object, in such cases, is best accomplished by moderate sweating, along with the evacuation of which, from the surface of the body, an excess of caloric seems to fly off ; by which means, or at other times by the mere exposure to cool air, the febrile state becomes mitigated for a time, even although the first indication has not as yet been fulfilled. But as soon as the primary cause of fever is removed from the *primæ viæ*, the stric-

ture on the surface, which depends upon it, becomes permanently lessened ; and a sweat breaking out, relieves the system both from an excess of caloric and the retained matter of perspiration. Upon the principle of the surface-stricture being a state of sympathetic spasm, you will observe, that after the necessary evacuations from the bowels, relief from what may still remain of that stricture will be best promoted by the help of something sedative, of which the most useful are the warm pediluvium, and small doses of laudanum, frequently repeated, with tepid drinks. With regard to the general effect of obstructed perspiration, it does not appear that its mere retention has much influence of itself indirectly moving the pulse ; but rather, from the strict sympathetic affinity which subsists betwixt the surface of the body and the digestive organs, it so happens, that perspiration is never extensively obstructed,

from any cause whatever, without the early succeeding effect of increasing all the natural secretions poured into the stomach and bowels ; and thereby, in the present case, while perspiration remains defective, it serves to support the original cause of gastric fever. For the purpose of accomplishing the first and great indication of cure in gastric fever, a point without which relief from the febrile heat will prove of little permanent avail, it is obvious that emetics and laxatives are alone to be depended on. But in prosecuting this object, a selection of remedies possessing these powers which may be best suited to the purpose, is of inexpressible importance ; and with respect to both of these classes of medicines, you will find that the most useful, because they are the most efficacious hitherto known, are to be found in the mineral kingdom.

Upon the subject of emetic medi-

cines in general, I am inclined here to take notice of a prejudice which I have found to prevail against them among many, even medical men, which I think unmerited and groundless. By these, the act of vomiting is held out to be an unnatural operation, and one, therefore, which ought to be considered as hurtful. Vomiting is an action of the system which nature has frequent recourse to, without the excitement of art ; and also with great benefit, in discharging from the stomach its offending contents. It is therefore in such cases to be esteemed a salutary operation ; and it is for a similar purpose only that art ever calls it into use. It is likewise alleged as an objection, that the act of vomiting serves to throw bile (or to pump it, as it is expressed) from the duodenum into the stomach. In all cases where there exists an unusual secretion of bile from the liver, the duodenum necessarily forms the great recep-

tacle where it is retained, but from which it appears to find its way most freely into the stomach ; and if you can command the discharge of the morbid contents of this receptacle more completely and speedily, as well as safely, through the stomach than through the intestines, a convoluted canal of more than twenty feet in length, there assuredly can exist no reason why it should not be practised. Indeed, an exuberance of bile, collected in the duodenum, appears to be as readily discharged through the stomach by vomiting, as if the stomach alone literally contained it, whereas the accomplishment of the same salutary purpose, and the power of sending the diseased contents of the two large reservoirs at the upper end of the intestines through the whole length of the canal by laxatives, is a point of the utmost uncertainty ; and you will generally find, that the operation of a single emetic will void more

offending matter from the stomach and duodenum, with more certainty, as well as with more immediate relief to your patient, than a course of laxatives for many days will do without it ; neither, indeed, under an acute disease, is there time afforded for so slow a process ; nor are antimonial emetics attended by any hazard, nor even by more severe nausea, than ipecacuan, unless it happens by an over dose, or by mismanagement during its operation. One grain of antimon tartar, for an adult, will generally nauseate the stomach in half an hour, when, without waiting longer, the stomach should be distended by drinking warm water ; and vomiting is promoted by irritating the fauces a little with a feather. One half-glass of wine after every fit of vomiting will assist its operation. If the first grain of antimon tartar does not nauseate in half an hour, the addition of one half-grain more, at the end of that

period, will most generally produce the effect.

A similar object occurs in respect to laxatives: indeed this is a class of medicines with regard to which much discrimination is always required, in choosing that kind, or that individual article, most suited to fulfil the indication to which it is directed. But, upon the whole, for the purposes of the case before us, the mercurial laxatives, and others selected from the neutral salts, are more generally efficient than any thing from the vegetable kingdom, especially when there is a redundancy of bile along with other morbid alvine contents; and I have seldom seen gastric fever occur, without an increased secretion of bile. Of these, the tartarite of potass, or the tartarite of potass and soda, and phosphat of soda, are the best, especially when well diluted in the stomach, by drinking plentifully of gruel

or tepid water. It is also probable, that their saline nature enables these medicines to incorporate more perfectly with the contents of the intestines, and thereby to give a more extensive stimulus to their coats; at any rate, the thing is undoubted, that these laxatives have the effect of clearing away any bilious contents, with more certainty than either sena, rhubarb, aloes, jalap, or any vegetable purge, excepting gamboge, which, from its effects, I have observed to be a most useful medicine, though it is too irritating for the use of children. It is by a prudent and free administration, then, of antimonial emetics, along with mercurial laxatives, assisted by the neutral salts, that the first and great indication of cure is here to be accomplished; and in the uncomplicated gastric fever, you will find, that as soon as, by these means, signs are exhibited of the vitiated contents of the stomach and intestines

being removed, the general febrile state, including the accessory cause of increased temperature, will also be subdued, without any farther medicinal aid ; while some natural appetite for food, and quiet sleep in the night time, will return, demonstrating that the cause of the disease is carried off.

Among other objections with respect to the propriety of such free evacuations, an impression subsists of their tending too much to induce weakness, or to increase that debility which already exists. But this, in reality, is an apprehension totally unfounded, because the form of weakness which takes place on the early stage of fever, does not arise from real exhausted strength, but from the energy of the nervous system having become impaired, in consequence of a certain morbid cause being applied to some part of it, which acting there in form of a poison, influences the whole by sympa-

thy with its deleterious effects on the springs of life ; rendering the person who is thus affected unable to exert that strength which he is possessed of. Any degree of languor, therefore, which may be induced by an emetic, especially at the beginning, cannot be so mischievous as suffering the morbid cause to remain in action. Of course it happens, that, whatever will act upon this morbid cause, so as to evacuate it from the body, so far from weakening, will assuredly tend to the restoration of strength ; and this is a fact which unvarying experience has proven in every instance where nature has not been already exhausted by other means. In so far as the *origo mali*, in gastric fever, may be seated lower down in the intestinal canal than the stomach and duodenum, which, indeed, is sometimes exclusively the case, those laxative medicines, which bear only the designation and powers of

cooling aperients, appear to be entirely insufficient for the purpose. The intention is not merely to preserve the bowels soft, but to discharge from the intestines a lurking cause of disease. To accomplish which purpose, very free evacuations are always necessary, procured by the help of the most active purgatives, administered in appropriate doses ; remarking the nature of what comes off, till it puts on a healthy appearance ; a circumstance which usually attends a solution of the fever, with its accompanying train of symptoms.

I am yours, &c.

LETTER VI.

DEAR —

It is but too certain, that in our profession great difficulties have arisen, in tracing and stating facts, as well as in drawing just inferences ; and, as my wishes go no farther than an endeavour to be useful to you, I shall not trouble you with adducing any instances of these, nor with giving you many cases, in the way of proof, of my own statements ; but only, as occasion shall require, present a few to your notice, on what I believe to be the true character of many of the morbid phenomena which are daily before your eyes. By the study of these, I flatter myself, I have been enabled to

direct my own prescriptions, with more rational precision, as also with a very satisfactory degree of demonstrable certainty, through many varied forms of disease; and leave it to yourself to weigh their importance in the progress of your future practice.

GASTRIC FEVER—*August 10th.* A boy, æt. 7, was attacked three days ago with a feverish paroxysm. At present has great heat, with some moisture at the same time on his skin—Headach, thirst, and very furred tongue—Pulse 120.—
 ℞ Solut. Tart. Antimon. statim sumend.
 Item ℞ Calomel. gr. iip Pulv. Jalap. gr. v. mane sumend.

12th. Throw off a great quantity of bile with the emetic. His stools, from the laxative, were also very bilious. The febrile symptoms, however, unabated. Is perspiring freely.—℞ Solut. Emet. ut antea.

13th. Greatly better. Febrile symp-

toms all much mitigated—again vomited a great quantity of bile.—℞ Cathart. ut antea ; statim sumend.

14th. The laxative operated freely. Is free from fever.

The following case is not less marked, though more protracted :

July 21st. A boy, æt. 11, has for some days laboured under a febrile state. His pulse 100. Is restless—with heat, thirst, a parched, furred tongue, bad taste in his mouth, head-ach, and weight at the precordia.—℞ Emetic ex Tart. Antimon.—Discharged much bilious matter both by vomit and stool.—℞ Haust. Anodyn. H. S. Sum.

22^d. Symptoms not abated—his skin dry.—℞ Mistur. Diaphoret.—Let him take freely of gruel, or toast and water, with beef tea, and occasionally panado.

23^d. Has perspired a little—His bowels open.—Cap. Haust. Anodyn. u. a.

24th. Symptoms much in the same state.—℞ Emet. u. a.—℞ H. Anod. H. S. u. a.

25th. Brought off much bilious matter both ways—Rested better through the night.—Pulse 90 in the morning, at night 100.—Cap. Haust. Anodyn. ut antea.

26th. His tongue cleaning at the point and sides—Headach gone off.—Pulse 90.—℞ Pulv. Jalap. gr. x. Calomel gr. v.—Cap. Haust. Anodyn. ut antea.

27th. The laxative dose moved him gently.—℞ Cathar. ut a.—℞ Haust. ut antea.

28th. Pulse still 90—His tongue, though somewhat cleaner, is still loaded on the back part.—℞ Emet. ut a.—℞ Haust. Anod. ut a.

29th. Vomiting bilious coloured fluid, but in less quantity than formerly.—Pulse 80.—His tongue and mouth more moist.—℞ Haust. Anodyn. ut a.—℞ Pulv. Laxativ. ut antea. Man. Sum.

30th. His tongue is cleaner, his stools less bilious.—Pulse 80.—He begins to take food with relish.—℞ Haust. ut antea.

August 2d. Continues to recover.—℞ Pulv. Laxativ. ut antea.

10th. ℞ Cathar. ut a. Is free from complaints, excepting weakness.

Those of all ages are liable to gastric fevers, and, from the nature of the disease, are also liable to returns of it, as often as the exciting cause is renewed in the intestinal canal. It is this kind of fever which infants and young children are peculiarly subject to. To such it is sometimes fatal, and almost certainly so to aged people; but to these, however, it seldom occurs; and in the middle time of life, when not complicated, it very rarely proves mortal, I believe never, when attended to early. But when vigorous measures are neglected, the disease is often protracted to a great length, even to eight or ten weeks; two instances

of which occurred lately to two young ladies of your acquaintance. The febrile symptoms of neither of them ran high, pulse moderate in strength, and seldom exceeding ninety ; the heat moderate, but attended with thirst, parched mouth, and furred tongue. In neither of these cases were the evacuations from the stomach and intestines carried on with that vigour which such cases require ; and in the course of the disease, to one of them in particular was administered Cinchona in considerable quantities, diluted Nitric Acid, and Tinct. Digitalis, without the smallest effect in lowering the pulse, or of apparent benefit of any kind ; and both of them recovered at last, only in proportion as their stomachs and bowels were well cleansed by repeated emetics and laxatives, every other remedy having proved abortive in checking the disease.

Other two cases of long protracted

gastric fevers are those of two gentlemen, one aged sixty, and the other twenty years of age. It is unnecessary to give you minute reports of the progress of the disease. I may shortly say, that in both cases it was of very long duration,—about ten weeks, and in both attended with moderate symptoms. The discharge of a considerable quantity of offensive fluids, mixed occasionally with some bile, both by vomiting and purging, contributed but little towards the desired relief; till at length, by the persevering aid of repeated laxatives, a great collection of consistent fœces was ejected, especially from the young man. These fœces had to a certainty been long accumulated in the recesses of the intestines; and from the result, they appear to have formed a principal part of the remote cause of the fever; for, after these were expelled, recovery advanced with rapidity.

A very distressing concomitant of this situation is want of sleep, which necessarily proves very exhausting to the frame; it therefore requires, and is greatly remedied by, a full opiate every night. The above is to be considered as a state of simple fever, because it acknowledges no disease to be present, as a concurring cause of febrile excitement, besides gastric irritation.

I shall next proceed to take notice of that febrile state, which is derived from an idiopathic organic obstruction, as its primary remote cause.

This, as well as the former, gives a state of fever, originally flowing from one unassociated cause acting in the system. Under this head are included, in the first place, all topical inflammations which are idiopathic, from whatever occasional source they may be derived; such as direct local stimuli, wounds, bruises, fractures of the bones,

and laxations, application of excessive cold, or of burning heat, &c. forming obstructions in the capillary vessels of the vascular system, and exhibiting what is designed local inflammation; from whence, by a sympathetic affinity, the heart and arteries are drawn into violent action, and it thereby becomes a primary cause of fever.

A febrile state, however, is not always the necessary effect of every form of organic obstruction. On the contrary, glandular obstructions, imperceptibly formed, often exist in a latent state to a considerable extent, and for a long period of time, without producing this effect, especially in organs of little sensibility, and such as are not essentially necessary for the maintenance of health; it only happens, when the injury is either to a great extent, or when the organ affected is one of much sensibility, and where there is a disposition to sympathetic affinity habitually

subsisting betwixt it and the heart and arteries. But this appears to be decidedly the case with all membraneous parts ; and it is observed, that the vessels of membranes are at no time considerably inflamed without drawing the whole vascular system into sympathetic increased action.

Among the various opinions which have been formed respecting the proximate cause of inflammation, the two which have been most recently adopted are : That it is formed either in consequence of a spasmodic stricture, excited in a portion of the extreme vessels by some irritating cause, or else in consequence of the increased action alone, of a department of the arterial system, from a similar application.

In contemplating the phenomena of inflammation, it is evident that an obstruction to the free circulation through the capillary vessels of the part inflamed has

been in some way formed ; and that there exists an increased action of the vessels in, and surrounding the inflamed part, is also obvious ; but the coats of the arteries have no other mode of acting than that power of contraction and relaxation which is inherent in every muscular fibre ; and although the pulsatory action of the heart constitutes the moving spring to the whole arterial system, it decidedly appears that the arteries of a particular part or organ, can be excited to exercise their contractile power with greater force in that particular part, than prevails in the rest of the system at the time, though not with greater frequency of pulsation than that which the heart itself is then performing. But, through a law of the nervous system, these muscular coats of the blood vessels are liable to be called into this excessive action by the effects of certain stimuli or irritation applied to them ; and these stimuli may be applied

either directly to the part, or else indirectly, as is already observed, by the action of morbid sympathy.

It being admitted then, that inflammation is visibly the effect of some cause obstructing the natural progress of the fluids through the extreme vessels of a particular portion of the vascular system, the question at issue comes to be—what is the nature of the primary obstruction thus presented to the stream of circulating fluids, which is thus followed by inflammation? and where is the primary obstruction usually seated?

I have already mentioned the promptitude, with which membranes suffer inflammation from morbid sympathy; I wish farther to say, that I conceive the primary vascular obstruction, which is succeeded by acute inflammation, to be, in general, seated in the extreme branches of the returning veins, rather than in the arteries. The appearances attending in-

flammation, from an external mechanical cause, as by a bruise, or a cut for instance, seems to demonstrate this. In no long time after a superficial cut has been received in a fleshy part of the body, where small veins only are divided, the bleeding having stopped from contraction of the coats of the divided vessels, some hardness and swelling is perceived upon the edges of the wound, the heat of the part not being sensibly increased. In some time longer, an increase of swelling, with a little heat, redness, and throbbing is perceptible; demonstrating that the action of the surrounding arteries is augmented, as also that some obstruction is presented to the passage of the contents of these vessels into their corresponding veins, and so exhibiting an inflamed state of the part. A very similar process occurs in the case of bruises, &c.

But considering the muscular fabric of the coats of the blood vessels as being

subject, like other muscular fibres, to morbid spasm from the application of stimuli, there is little reason to doubt that the primary stop in the capillary vessels previous to local inflammation, when that state is excited by a direct stimulus applied to the skin, without either solution of continuity, or a bruise, is also the result of spasmodic stricture, formed on the extreme veins of the part, succeeded by an increased exertion of the surrounding arteries.

But, besides the instances of vascular obstruction induced by the application of direct stimuli, that effect can frequently be traced to the irritation of an indirect stimulus, established by the action of a morbid sympathy. The sources of these are probably numerous, and the effect is sufficiently exemplified in that inflammation in the membranes of the thorax, in the throat, in the abdomen, and, where there is a caries tooth, in

the gums ; which so commonly succeeds to cold applied to the surface of the body, especially to the limbs and feet ; as also, in a most important degree, from irritation seated in the digestive organs.

If you suppose, then, that, from the operation of one or other of these irritating causes, a spasmodic stricture of the tonic kind becomes formed on a portion of the extreme branches of the veins, it is evident that an obstruction will thereby be presented to the fluids advancing from their anastomosing extremities, which will of course distend their containing capillaries. But the anastomosing arteries also must suffer distension, by the circulating fluids which continue to be sent forward from the heart not being permitted to pass along into the veins ; and therefore, besides distention, an exudation from their capillary extremities will naturally follow ; and by degrees as larger arterial branches between the obstruction and

the heart become more loaded, their coats are thereby stimulated to a stronger contraction, and their contents are partly forced into the nearest lateral vessels, where the resistance is now less, than it has become in a direction forward to the veins.

This, you may probably think, is subtilising too much, and perhaps justly ; as this habit, sure enough, very readily leads to false theory. But at any rate, in what is understood by spontaneous inflammation, there are many reasons for believing that the obstruction which forms the primary step to local inflammation is created by an action of morbid sympathy, or indirect stimulus ; and that the original irritation can very frequently be traced to a diseased state of the intestinal canal.

With respect to the mode of treatment which is most appropriate to a febrile state, arising from the above form

of organic obstruction, you are sufficiently informed already of the practice ; and it is evident, that whether you suppose the original stricture to be seated on the veins or arteries, the treatment must be the same. It consists in using every exertion which can act upon the primary cause of fever so as to remove it, and that can tend to lessen its effects in the system. Among these means, large general bleedings, as also topical bleeding whenever it can be applied, are perhaps the most powerful ; and, along with these, aperient medicines are generally in use. But, whenever an acting morbid cause is observed to exist in the digestive organs, a free discharge from these, by the most active evacuants, is a measure of great importance, from the mutual sympathy which subsists betwixt the stomach and every part of the body. In consequence of an external injury, the digestive organs have been observed to exhibit early

signs of derangement, and consequently of acting as a supervening cause of the febrile state excited by organic obstruction, and of retarding recovery from the primary disease. As to external applications, I have always observed tepid fomentations to be the most useful and the most soothing to the patient's feelings.

LETTER VII.

DEAR —

I have already noticed the obscurity which medical theories, from assumed principles, have diffused over our profession ; yet at the same time it is evidently necessary that a medical man should reason as well as observe, especially in diseases, the sources of which are concealed from the naked senses ; but the difficulty is, where to discover just data to proceed on, as we can only reason with correctness from such of these as are demonstrable. The law of morbid sympathies of the nervous system, is one which no one doubts of, and all allow its sphere of action to be very extensive, and its operation to be powerful ; therefore the acqui-

sition of a *ratio symptomatum*, formed on their action, in so far as their influence is observed to stand included in certain morbid phenomena, is evidently an object of material importance, and appears to be peculiarly so, as exhibited in a febrile state of the body.

The next source of fever, then, which I come now to point out, is that which is distinguished by its remote or primary cause being derived from something of an extraneous irritating nature, which has been received into, and circulates with the blood; and being thus brought into contact with the internal surface of the heart and arteries, a direct stimulus is thereby applied to them, by which means they are excited to increased action.

Of this nature are all infectious diseases; they are all attended with many aggravating symptoms, and present a state of fever, which, in consideration of

the concurring action of its primary and secondary causes, is justly to be considered under the idea of a complex disease. This is most remarkably exhibited in all the exanthemataë, a form of fever which never occurs unaccompanied with gastric derangements of much importance.

Fever, when it exists, then, as a complex disease, is that febrile state of the body, which, although it acknowledges only one primary cause, becomes aggravated in its effects, by the co-operation of other secondary causes of irritation, acting at the same time on the nervous system. In fever from infection, you will, most commonly, find these to consist of a chain of morbid sympathies, which are the consequence of one or more organs of the body having been brought into a sympathising action with some other which is in a diseased state, and drawn by it into morbid action also ;

and this sympathising organ perhaps affecting others in a similar manner, each of them exhibiting symptoms peculiar to its own department ; and all of them depending on, or, as it were, arising from, the impulse communicated by the first exciting, or real remote cause of the disease, tending to aggravate its effects.

This statement is well explained by attending to what occurs in the phenomena exhibited under small-pox, especially observable in the inoculated small-pox, in which the time of receiving, and the progress of the infection, can be perfectly ascertained. Here the specific poison received into the body forms the primary cause of fever, the commencement of which fever is soon followed by a morbid sympathy of the abdominal viscera with the irritation formed in the vascular system, whereby an increased secretion into the stomach and intestines

is produced ; and the irritation excited by this accumulation within the canal, very quickly gives the appearance of a re-action on the heart and arteries, contributing to augment their febrile action, and thereby forming a supervening cause of fever. From the same source also (gastric irritation) a severe headache arises, when, if the brain itself happens to be included in the morbid sympathy, a set of symptoms depending on that affection, including extensive disorders of the nervous system, necessarily take place. Again, if the membranes of any of the abdominal or thoracic viscera have become the seat of sympathetic influence from the irritation established within the canal, local inflammation is readily established, with symptoms peculiar to the organ so affected ; and all these follow in regular climax from the primary exciting cause—Variolous Infection.

While we keep in view the operation of the above-noticed occasional affinities of the nervous system, I shall offer you some remarks on such morbid sympathies as are observable in the course of that febrile state, which, in its various forms and degrees, is frequently so general, under the appellation of Typhus Fever.

Typhus Fever is confessedly contagious, as well as the exanthemataë just now mentioned; but every substance which, when applied to the human body in a peculiar manner, shall have the effect, on the animal œconomy, of occasioning death, or even disease, is to be defined a poison.

Poisons are found to exist both in the animal, vegetable, and mineral kingdoms; and they exist in effluvia floating in the atmosphere, emitted from particular substances. They are deleterious in proportion to their characteristic ac-

tivity on the system when received into it, and in proportion to the quantity taken in. Their effects vary also, in the extent of the morbid phenomena which they produce ; some of them are poisonous, in whatever way they are applied to the body, as arsenic ; others are poisonous only when absorbed into the blood by a wound, as the poison of a viper, &c. The variolous poison is conveyed into the blood equally by a wound or by inspiration. Some of them exert their deleterious influence through the nervous system only, without entering the blood-vessels ; and this either by morbidly exciting its powers and producing convulsions, or else by destroying its action altogether, giving stupor, coma, and palsy. Some of these are of a septic nature, and, when mixed with the blood, give a tendency to putridity, and gangrene in the solids ; and many of them destroy only in large doses, while others are deadly even

in the smallest quantity. Poisons may also be insensibly introduced into the body (as above-mentioned) in the form of invisible miasmata; for instance, the case of chincough, and all the exanthemata; as also in that specific effluvia which produces typhus fever.

The secret sources and nature of the virus of infection, being so far concealed from the inspection of the senses as to be discovered only by its effects, leaves the subject open to endless conjecture with respect to typhus. That disease is generally understood to be derived from putrid animal and vegetable substances in a certain state of decomposition, especially from the former; and it is observed, that effluvia, even from living human bodies confined in close apartments, combined with the emanations from the filthiness of their unventilated abodes, as happens particularly in gaols, has generated this contagion, without

the combination of any vegetable substance ; and this more rapidly in a warm atmosphere. At the same time, it is true, that even the habitual inspiration of effluvia from dead animal matter, at an early or imperfect state of putrefaction, does not produce fever ; from which consideration a probable inference may be drawn, viz. That putrid exhalation does not produce contagion till it has arrived at the utmost limits of decomposition, when its ultimate elements are set at liberty to form new combinations, and by these the infection appears to be created ; and, that long-continued accumulations of certain effluvia from the living body in unventilated places is favourable to this process ; but most rapidly so, when accompanied with warm moist air, and in hot climates. At any rate, whatever the arcana of nature may be in this matter, the thing is certain, that infectious fever has always prevail-

ed most in the vicinity of such sources of putrefaction, which is sufficiently ascertained to authorise the practical advice of shunning all such situations. But from whatever it originates, there is no doubt that the infection of typhus fever is a specific poison, received into the blood by the ordinary channels by which other gaseous poisons are communicated; and that it can be transferred to others, by the vapours which emanate from the perspiration, the fœces, or breath of those who labour under the disease.

With this view of the matter, and taking typhus fever in all its varieties, as consisting of morbid phenomena, which flow from the original action of a specific poison, I shall proceed to state to you the pathology of the disease founded on this idea, and derived from the principles already laid down.

Pathology of Typhus Fever.

In the definition given of typhus, or putrid tending fever, it is said to be a contagious disease, characterised by great prostration of strength, senses much impaired ; quick, weak, small pulse, and heat moderate. Very exact and minute histories are also given of the long list of symptoms which appear in succession through the whole course of the disease. But then these descriptions, you will find, amount in reality to little more than a list of an undiscriminated mass of appearances, from which very little information can be derived with respect to that important object, which ought to arise out of these distinguishing signs, viz. A *ratio symptomatum*, leading to a mode of management depending upon it.

Experience has shown, that a person

may inspire the poisonous vapour which commonly produces typhus, without being necessarily affected with the disease ; because, in the first place, it is certain that the human body is, at some times, in a state to resist its effects more obstinately than at others ; and, in the second place, a sufficient quantity of the poison must be taken in before its full effects are produced in every supposable state of the body. Hence it happens that a person may occasionally inhale a portion of this poison daily, for many successive days, without a febrile state being thereby formed ; although I believe never without feeling certain uneasy sensations, especially lassitude ; while, at other times, a very slender exposure indeed is sufficient to produce the disease. In the first case, the person is poisoned, as well as in the second, only with this difference, that, in the first, the dose received had been unequal to the purpose of exciting

the system, or else the state of his nerves and fluids was such as rendered him less liable to its operation, which amounts to the same thing. It therefore appears, that at times the infectious miasmata of typhus may be mixed with the blood, and may there produce some of its specific phenomena, without necessarily going to the height of carrying the heart and arteries into accelerated action.

The progress seems to be this. A certain portion of the specific poisonous miasma is taken in by an individual who is apparently in health. If the dose is small in proportion to the susceptibility of his system at the time, its effects are moderate, and appear to be excited, in the first instance, on the nervous system exclusively; through the whole of which, the healthy energy is quickly lessened, as is exhibited by the languor, weakness, and inactivity, with dejection of spirits, and slight confusion of the head, which

are its first consequences. After an indefinite period, the pulse is a little quickened, with slight horripilatio, while the increase of heat is scarcely perceptible. In a few days more, the above symptoms are all increased, exhibiting rigours, accelerated pulse, with increase of temperature ; and a spasmodic stricture is formed on the excretory vessels on the surface of the body, whereby the excrementitious fluid of perspiration is retained in a similar manner with that formerly noticed.

But farther, from the known sympathetic affinity which subsists between the surface of the body, the abdominal viscera, and the vascular system, the digestive organs are called into morbid action, and increased secretions, from their glandular system, are discharged into the canal, establishing there a gastric irritation, in addition to that already existing, which, on this occasion, forms an accessory cause

of fever, by a sympathetic re-action on the heart and arteries; as well as the source of other morbid sympathies, arising from the irritating matter which is now collected in the *primæ viæ*.

A second accessory, or supervening cause of fever, arises from the general stimulus to the system, which is derived from an increased temperature by a morbid evolution of caloric, and its retention in the body.

Farther, when the degree of irritation within the digestive organs is of that character, or to that extent, which is required to establish a sympathetic spasm on the membranes covering any of the viscera, or any tense membrane of the body, then, by a law of sympathy formerly mentioned, that membrane is very apt to become inflamed, and organic obstruction is thereby added, as a third supervening cause of the febrile state.

From a general survey of all which I

have seen of the disease, as well as of what I have read on the subject, the large mass of phenomena enumerated by the various writers, is fairly distinguishable into four classes of symptoms. Three of these are accessory, and arising by a climax of morbid sympathy out of the first or real remote cause of the disease, viz. the inspiration, and consequent mixture with the blood of a specific poisonous vapour, producing its own peculiar morbid action.

What the chemical effects of these noxious miasmata may be upon the mass of blood itself, when mixed with it, is not known : only this is certain, that, in the progress of typhus fever, the blood and all the fluids become thinner, and the solid parts acquire a strong tendency to become gangrenous ; which, of course, points out the poison to be of a septic or putrid tending nature. But it is from the effects derived from the above causes,

and the extensive morbid sympathies flowing from them, by which all the phenomena of typhus, from beginning to end, are to be explained, and from whence, by the known laws of the animal economy, they directly spring.

From the action of what cause it happens that caloric, when evolved, is also so tenaciously retained in the body under pyrexia, is not very clear ; it is, however, evident that, when sweating takes place, this excess of caloric flies off along with the matter of perspiration. It is, at the same time, capable of being abstracted, independent of the sweating process, merely by exposure of the body to cold air, as is demonstrated in the Suttonian practice under small-pox ; and still more perfectly by Dr Currie's happy extension of this practice to affusions of cold water, in a variety of other febrile diseases, as well as in typhus.

The accumulation of symptoms, however, which flow from the four above-mentioned sources, are not observed to appear always in regular or uniform succession ; on the contrary, nothing can be more anomalous, since, from the great variety of constitutional shades of predisposition to sympathetic diseases, peculiar symptoms are more permanently excited in some individuals than in others. Topical inflammation, for instance, under typhus fever, is occasionally very early established, and at other times not at all. But in tropical climates especially, the supervening disease of local inflammation proves painfully embarrassing, as, for the most part, it passes rapidly on to its termination, and, acting in addition to the effects of the original poison, proves in a few days gangrenous and fatal.

Again, at other times, the original in-

fection proves of itself so virulent, as, by its own specific enervating power, quickly to suspend, and entirely destroy the active energy of the brain and nervous system.

LETTER VIII.

DEAR —

WITH respect to the nature of the virus, which produces mild typhus, as being different from that which produces typhus gravior ; or yellow fever ; or, if the last, is only an aggravated state of remitting fever, from marsh miasmata, much has been said, and many different opinions offered. But really the indigested mass of matter which has been recorded on the subject, exhibiting such a diversity of sentiments, and even apparent contradictions among practical observers, renders it impossible to discover where the leading facts are to be found, or how the leading principles are to be selected upon which any exact conclusions can be

established, at least by those who have never seen yellow fever, and has left the matter, to us, still in a state of suspense. I cannot help supposing that this uncertainty must in some measure depend on the mistaken, or biassed and tenacious opinions of observers, as well as on conclusions incorrectly drawn from observations which are probably justly enough founded. This perhaps is not the least considerable source of error ; and it may also have happened, as on other occasions, that a previous impression of physical mystery may have assisted in obscuring the perception of truths otherwise sufficiently obvious and intelligible.

Upon this subject, I will only observe to you, that typhus infection appears evidently to be an animal poison, because it is observed that it can be generated and communicated by the living human body, under certain circumstances, while totally secluded from any vegetable efflu-

via ; and although the decomposition and putrefaction of dead animal substances does not necessarily give out infectious miasmata, yet it has not been proven that it never does so ; and that marsh miasmata, on the other hand, are to be considered as vegetable poison, emanating from vegetable substances alone, in a certain state of decomposition.

The effect of the first upon the human body, is to give a strong tendency to putridity in the fluids, as well as in the solids, in the course of the febrile state which it excites, independently of any previous organic obstruction.

The same thing, however, is not observed to take place as the immediate effects of fever derived from marsh miasmata. At the same time, in tropical climates, where the atmospheric heat gives such an undoubtedly strong propensity to local inflammation, both in the viscera and head, a most rapid progress to gan-

grene, in such cases, proves equally and as speedily fatal as the other. And, if it ever happens that these two poisons shall be in action at the same time in the human body, which seems not improbable, the result must, in all probability, prove fatal in any climate.

That marsh miasmata, when in a very virulent state, will even produce fever of the same character with typhus gravior, appears from an instance which I had many years ago, of a man and his wife, who were infected at the same time, by being employed in withdrawing a quantity of lint, in a very corrupted state, from a pool of stagnant water in marshy ground, where it had been macerated. The fever was attended by putrid symptoms. They both recovered, but not without having thrown off large pieces of mortified flesh from their loins and thighs.

If what is designated yellow fever is a specific disease, differing in its character

from the above, that technical designation appears to be unfortunate ; because a certain degree of sallowness of the complexion and of the eyes, is a circumstance which occurs frequently enough, both in typhus and marsh remitting fever, and so may have led to misapprehensions on the subject.

In proceeding to consider the method of cure which is most applicable to a disease of so complicated a nature as typhus fever, it is obvious that much difficulty must occur. And it appears that there are few diseases, in the treatment of which it has happened that physicians have been more uniformly led to direct their attention to the consideration and relief of certain violent symptoms only, than has occurred in this.

If we consider that there is a certain quantity of extraneous matter, or virus, taken into the body, which, by remaining there, is productive of certain conse-

quences tending to destroy life ; it is very obvious that the primary exertion ought naturally to be directed to the purpose of either removing that extraneous matter altogether, or, if that cannot be done, to endeavour so to alter its nature by every probable means of acting upon it, as to lessen or destroy its morbid agency in the system ; endeavouring at the same time to mitigate its effects by such means as experience has pointed out to be useful for accomplishing the purpose.

With respect to the first of these objects, I believe there is hitherto nothing known, which, by being taken into the system, is understood to have the power of correcting, and chemically rendering inactive, the typhus poison, nor, indeed, the infectious matter of any contagious fever. On the contrary, it appears, that after remaining for a certain time in the circulation, it is sometimes thrown out

from the surface of the body, and, being arrested there, gives the phenomena of exanthematous fever. And, on other occasions, it seems probable, that it at last passes off with the vapour of perspiration ; or is, by degrees, so assimilated by the powers of life, in those who recover, as to become inert. In how far this act of assimilation can be assisted by art, or in what manner that form of assistance should be applied, is not known ; but it is a point very worthy of investigation. It is likely that the antiseptic quality of those acids, the fumes of which experience has proved to be so useful in weakening the virulence of contagious effluvia in the air of infected apartments, may operate somewhat in this way ; or, perhaps, the inspiration of oxygen gas, diluted with atmospheric air, might prove serviceable. I have been led, however, to suspect, that the substances which contain even abundance of oxygen, com-

municate very little of it speedily to the blood, through the medium of the digestive organs. With this view of the matter, then, our attention comes to be chiefly and strongly led to the management of the accessory, or supervening causes of fever, above pointed out, viz. The accumulation of irritating matter contained within the stomach and intestines, and an excess of caloric, acting in an evolved state in the system at large; each of which is more subject to our direction than the cause formerly mentioned.

The approach of typhus fever is at all times attended by decided symptoms of an existing diseased state of the stomach and bowels, *i. e.* with those signs which are known to point out their contents to be of a morbid irritating nature; but, whenever the alimentary canal happens to be loaded with irritating matter, some derangement of the healthy operation, either of the general system, or of

some particular organ of the body affected by a morbid sympathy, is the certain result ; and, when this state happens to be united with any other cause of fever, its effects are always thereby much aggravated. It is therefore reasonable to use every exertion in such cases, to expel it as quickly as possible.

The secretions of bile, of gastric juice, and other fluids, which, during a state of health, are naturally discharged into the alimentary canal, are all immediately increased in quantity on the commencement of typhus fever, and in some cases to a very great degree. And, although it is an object of the first importance towards a safe recovery, that the system should be relieved from the irritation created by the retention and corruption of these fluids in the primæ viæ, yet the accomplishment of this purpose is often attended with much difficulty ; especially if the fever shall have proceeded seven

or eight days before help is called, a circumstance which too often occurs. On such occasions, the fatigue and debilitating nausea attendant on the operation of an emetic, becomes a matter of apprehension ; but, at the commencement of the disease, evacuations from the primæ viæ ought to be made with freedom, both by vomiting and purging. At this time the patient not only bears them well, but they are attended with evident mitigation of the general febrile symptoms. Indeed, it has occasionally so happened, that, apparently by this means, the febrile state has been at once entirely removed. This, to be sure, is a very surprising circumstance ; and, I think, can only be explained by supposing, that such fever has not been really typhus, arising originally from poisonous miasma received into the blood, but has been merely of a gastric kind.

On the commencement of typhus fe-

ver, then, the stomach ought to be evacuated by the free operation of an antimonial emetic, which will generally pass with beneficial effect through the bowels also ; this to be repeated again and again, as directed by the furred state of the tongue, together with the prevalence of such phenomena as are observed to arise from a morbid sympathy with the primæ viæ in certain other organs, such as head-ach, vertigo, thirst, with some remaining feeling of weight at the præcordia.

As the fever advances, however, the state of debility flowing from diminished nervous energy may become, and often does become, so considerable, as to render the full action of vomiting doubtful ; and when this happens, your dependance for farther benefit in accomplishing this object must be on the use of laxatives alone, perseveringly applied, as it is certain that the retention of any sort of noxious matter in the primæ viæ, the

tendency of which is, in general, to lessen the energy of the nervous system, is infinitely more debilitating to the human frame, than the temporary fatigue attendant on the moderate operation either of an emetic or laxative medicine, besides the harm which may ensue from its being partly absorbed by the lacteals. For this purpose, calomel, and the neutral saline purges, are the most useful ; and of the last, I prefer the tartarite of potass to any other, because I have thought that it shews almost a specific effect in acting upon and evacuating bile when it is redundant in the canal. With the aid of these, one or two discharges from the bowels should be procured every day. The benefit attending this practice I had long ago seen recommended by Dr Fordyce, and others ; and I was led to adopt it afterwards at a time when typhus fever prevailed much in this place, from observing, that in cases which were

attended with a moderate diarrhœa, the disease proved most moderate, and generally terminated favourably ; and, having remarked the offensive nature of the stools, I did not doubt that the recoveries were favoured by this circumstance.

I am, your's, &c.

LETTER IX.

DEAR —

HAVING remarked to you the important place which a loaded state of the primæ viæ holds in supporting a febrile state, both as a primary cause, and also at other times as a supervening or accessory cause of fever, I will proceed to mention a second accessory cause of augmenting the febrile state, in those labouring under typhus ; and that is, the stimulating power of an excess of caloric disengaged from its latent state, and retained in the body ; and connected with which is the spasmodic stricture evidently formed on the excretory ducts of perspiration. An increased velocity of the circulation may exist in fever, accompa-

nied only with a small increase of general temperature ; but a morbid excess of caloric, evolved and retained in the body, never happens without being accompanied by a quickened circulation. Caloric very commonly, though not always, evaporates along with the matter of perspiration, but when that is lessened, its accumulation becomes the greater ; and, when thus accumulated in typhus, it forms, by its stimulus, a second accessory cause of the febrile state. The power, therefore, of abstracting it from the body under fever with safety, when its natural escape is defective, is certainly a most important discovery.

After Sydenham, the Suttons have the merit of being the first who applied very cold air to the human body under febrile heat, and that in the case of variolous fever only ; latterly, however, Dr Currie of Liverpool has carried the practice to a surprising length, and has demonstra-

ted the happy effects of abstracting heat from the body under various febrile diseases, by the still bolder practice of applying cold water in place of cold air; and the great success which has attended it forms a complete proof of its utility. That the benefit derived from the affusion of cold water really arises from the abstraction of caloric, is proved, or at least rendered highly probable, by the circumstance of its being only useful when applied at those times when the febrile heat is most considerable, which is most commonly the case during four or five days at the beginning; and the superfluous heat being thus abstracted, its powerful effects in irritating the vascular system to violent action, in inducing debility, and in favouring a solution of the animal fluids, are also obviated. It appears, however, that, in consequence of some change having taken place in the body during the four or

five, or perhaps more days of heat at the beginning, a smaller quantity of caloric is daily liberated, and the general temperature of the body becomes lowered. The consequence is, that in this state the cold affusion is apt to reduce the temperature of the system below its natural standard, in so much as almost to overcome the vital powers. Hence it has been found, that at these times, merely to wash the body with a moistened sponge, together with a free ventilation of the apartment, is sufficient to prevent the morbid accumulation, and, of course, to mitigate the stimulating power of caloric, as an accessory cause of fever. When cold affusion is successful, a farther effect on the patient, after he retires to bed, is to induce sleep, when a general perspiration takes place, and every febrile symptom is mitigated. At the same time, this happy relief does not uniformly follow from

cold affusion,—a disappointment which most assuredly may arise from the primæ viæ not having been sufficiently unloaded previous to its use. It is the more reasonable to suppose this, when we consider, that in a state of even a slight disorder of the stomach, an immersion of the body in cold water is sure to call some of the morbid sympathies which depend on that viscus into action ; such as headache, chillness, languor, &c. How much greater, then, may we expect the effects to be, under that great accumulation which takes place within it, on the commencement of typhus ? For this reason it is evident, that the first attentions ought to be paid to the state of the stomach and intestines, and a full discharge procured from them before any affusion can with safety be made ; after which, while daily attention is paid to the state of the primæ viæ, affusions of cold water may be practised with less fear of disappointment,

With respect to the use of cinchona in typhus mitior, it will not stop the progress of the disease, as in intermittent fever ; and while the tongue continues furred, and, of course, the stomach loaded, it never is of any use ; on the contrary, it seems rather to increase that load. As soon as the tongue becomes clean, and the natural appetite for food begins to return, the use of cinchona, especially combined with laudanum, does undoubtedly promote recovery. It contributes to restore the healthy tone, and to remove the morbid irritability of the system, contracted during the course of the disease ; but by this time the febrile state is generally gone off. At the same time, under that more virulent state of the disease termed typhus gravior, which is attended with black tongue, petechinæ, hæmorrhages, and other signs of a dissolved state of the fluids, exhibiting a putrescent and

gangrenous tendency in the system, a large use of cinchona, combined with wine and acid drinks, from its known antiseptic powers in other gangrenous cases, has, as a desperate resource, been fled to in practice, and occasionally with benefit.

Through the course of typhus fever in all its shapes, the enfeebled vital powers are best supported by very frequent supplies of such food, chiefly acescent, as the unhealthy state of the digestive powers may be presumed most readily to assimilate. Of these, the farinacious food contained in gruels, panado made from hard biscuit, arrow-root, &c. are the best, with a plentiful supply of weak fresh broths. To allay thirst, weak acid drinks are the most grateful, and probably the most useful; also weak wine and water, or, in want of wine, fresh brisk malt liquor, forms a very good substitute. If the patient is restless, a full opiate is always proper.

I have formerly remarked to you, that it may be considered as an axiom, that, when a membrane, or membranous ligament, especially those of a firmer texture, becomes the seat of sympathetic spasm, a certain obstruction to the circulation in that membrane is thereby quickly established, so as to produce inflammation in the part ; and I believe it arises from the establishment and action of this law of morbid sympathy, that these inflammatory affections of the viscera, and especially of the membranes covering the viscera, which take place in the course of fever, are to be accounted for, and which, in typhus fever, so rapidly terminate in fatal gangrene.

From the direct application of acrid irritating matter to the internal coat of the stomach and intestines, it very naturally happens, that the first signs of local inflammation should be manifested there ; but the excitement to diseased action in distant organs, by a sympathic-

tic affinity with the irritated nerves of the stomach and intestines, becomes widely extended. Indeed, it would appear, that a peculiar aptitude becomes formed, in particular organs, at these times, to be thus affected; whereby not only an increase of their natural secretions, but also local inflammation, is formed; especially in the abdominal viscera, in the thorax, or head, accompanied with all its consequences; and establishing, by that means, organic obstruction as a third supervening cause of disease. It has been formerly mentioned, as constituting, at other times, one of the primary causes of fever; but here it becomes superadded to those already in action.

It is true, indeed, that diseased action of the sensorium frequently enough exists from morbid sympathy, independent of inflammation, and subsides again as recovery advances. But the dura and pia

mater are susceptible of membranaceous inflammation from sympathetic spasm, as well as any other membrane ; and although inflammation within the head does not universally happen in typhus fever, yet there is no doubt that it does occasionally take place, as is pointed out from the severe headache, great intolerance of light, with prominent sparkling eyes, and active ungovernable delirium, as has also been further verified by dissections. The liver and lungs are also prone to be affected in a similar manner by morbid sympathy, attended by symptoms peculiar to an inflamed state of these organs, as dissections have also exhibited ; which inflammation, however, is decidedly not the primary disease, but generated in the course of the fever.

— In our northern climate, typhus is very rarely attended by organic inflammation ; and when it does occur, it generally is not till after the vital powers are much

reduced, when general depletion by blood-letting is inapplicable, and the seat of inflammation is too far retired, except when seated in the head, to admit of topical bleeding ; therefore, under this complicated form of the disease, little effective aid can in fact be afforded, and it is a state from which, I presume, few have ever recovered. But from this circumstance, there again arises another powerful motive for clearing away the acrid contents of the primæ viæ with vigour, from the first commencement and through the whole course of the disease, as the best means of saving the patient from this alarming situation.

A similar chain of progressive morbid sympathies you will find to exist in all fevers (as well as in typhus,) where the primary cause is infection ; and, as much wavering speculation has been exhibited on the subject, I will just mention to you the view which I am led to take

of it, which is this.—Soon after the contagious poison has passed into the circulation, when as yet a small degree of quickness only is perceptible in the pulse, gastric symptoms become perceptible by the usual signs which point out irritating matter to be contained in the stomach ; next succeeds a feverish paroxysm, with surface spasms and heat, establishing a febrile state of the system, excited by the combined powers of primary infection, augmented by the supervening causes of gastric irritation and increased temperature ; and if the symptoms continue moderate, and the patient is assisted by the usual attentions, the disease runs its course and gradually subsides. But it occasionally happens that, in the course of the disease, a morbid affinity is perceptible betwixt some organ, or rather the covering membrane of some organ, and the irritated nerves of the primæ viæ ; in consequence of which, inflammation of such

sympathising membrane is formed, with much danger to the patient.

In the tropical fevers, the progress to organic obstruction is often so rapid as scarcely to admit of time for the application of such aid as is to be offered by art. For although, in general, the premonitory symptoms of gastric load are perceptible for a day or two previous to the feverish paroxysm, (a period when the most efficient assistance may be given); yet it also often happens—from the powerful tendency of a hot climate to increase irritability in the system, especially in the abdominal viscera, rendering them particularly susceptible of inflammation—that the load at the precordia, feverish paroxysm, and signs of gastritis, appear at one and the same time, hurrying on to gangrene and death in the short space of twenty-four hours.

Judging from the multifarious descrip-

tions given of tropical fevers, I am induced to think, that an epidemic fever occasionally prevails in those climates, which is an idiopathic disease, acknowledging organic obstruction, that is, local inflammation, for its primary cause, independent of infection, without any discriminating marks having hitherto been laid down, whereby the two diseases are to be distinguished as depending on distinct primary causes, and in which so much benefit has been derived from extensive blood-letting ; a practice inadmissible in a febrile state, arising from putrescent infection, and without organic inflammation.

Concerning the origin and defined nature of yellow fever, that epidemic which has occasionally prevailed so much in the West India Islands, in America, and in some parts of Europe, much perplexity, you will see, has prevailed, and various

opinions have been entertained in determining whether it be a contagious disease, whether it be real typhus, or whether it be a form of the ordinary remitting fever of warm climates from marsh miasma, and therefore believed not to be contagious ; but which, from its speedy termination in inflammation, and gangrene in some of the viscera, is as fatal as putrid typhus. From a careful review, however, of all I have seen written on the subject, it appears most probable that each of these diseases has occasionally prevailed, and perhaps both at the same time. It is also very supposable, that the one may arise out of the other ; that the very morbid state to which the body is reduced in most sorts of fever from marsh miasmata, including the noxious quality of the intestinal contents, &c. may generate that kind of animal effluvia which is supposed to be the principal source of typhus.

With respect to the treatment of the

yellow fever, you may observe, that the method which the most eminent practitioners have adopted from experience as the most advantageous, is one which coincides with that practice so naturally led to by the above pathology of morbid sympathies, and serves to corroborate its truth, viz. By discharging from the primæviæ, as expeditiously as possible, their irritating offensive contents, and in reducing the febrile heat by cold applications; and, if the pulse is very full, by blood-letting, especially at the beginning, *i. e.* within the first or second day, observing that after this time, that is, after inflammation has commenced, which most commonly occurs about the third day, occupying either some of the abdominal viscera, or the head, when all the symptoms become greatly aggravated, and the progress to gangrene generally becomes also so rapid, that little efficient aid can be afforded, either by blood-letting, or

any other means. As to the practice of very large bleeding, so much recommended of late as being peculiarly useful, especially at first, seeing that this evacuation cannot be supposed to act by abstracting any part of the primary cause, yet by lessening the violence of vascular action, it may perhaps be viewed as prophylactic with respect to the secondary disease, organic obstruction, which, when established in the stomach or intestines, is evidently a supervening cause of fever, and the direct source of that exhausting state of nausea and vomiting, which precludes the use of the necessary remedies, and in general proves quickly fatal by the gangrenous discharge of black vomit.

It is also worthy of remark, as it farther tends to demonstrate the agency of the contents of the *primæ viæ* in producing organic inflammation, either by immediate contact in the coats of the stomach, or by morbid sympathy in dis-

tant organs ; that in these cases which terminate most favourably, the stools are all along abundant and bilious, with some occasional bilious vomiting, indicating, that although there exists the yellow colour upon the skin, yet the common gall duct is not obstructed ; and that by these free discharges, the intestinal contents being carried out of the body gradually as they are collected, their agency, as a supervening cause of the febrile state, is greatly removed, and they are not left to acquire that degree of acrimony which is necessary to the establishment of inflammation.

LETTER X.

DEAR —

AFTER some pause, I resume my pen in continuation of the same subject, and am desirous of directing your attention to the consideration of some other of those diseases which derive their origin from infectious effluvia received into the body ;—in which, I am persuaded, a very little reflection will enable you to discover a vortex of morbid sympathies, similar to those pointed out, brought thereby into action. The small-pox, measles, and scarlatina, are particularly of this description. With respect to the first of these, I think that the progress of inoculated small-pox, as being an infectious disease which can be excited at pleasure,

and which we are enabled, of course, to mark the several stages of to a day, may be fairly taken as an example—as a standard by which to compare the cases and progress of every other infectious fever.

That the variolous infection, in the natural small-pox, equally invisible with every other kind of infection, is taken into the circulation by respiration, we all believe, and after an uncertain latent period, it proves the primary cause of this peculiar fever. But the small-pox infection can also be introduced into the circulation at pleasure, from the surface of the body, by absorption from a small wound made in the skin, large enough to admit of an application to the divided lymphatic absorbents, of some purulent matter impregnated with it, taken from a pustule of a variolous patient. After remaining there for a certain time, it becomes at last absorbed, is conveyed through the lymphatic glands, commonly marked

by a small enlargement of them, and enters the circulation; soon after which, the pulsation of the heart and arteries is quickened, and fever commences. Almost coeval with this, the signs denoting something of an irritating nature contained in the stomach are exhibited; such as impaired appetite, distension of the precordia, headache, thirst, furred tongue, languor, and a surface spasm, with chillness; demonstrating that this accessory cause of fever is already established. This state is, in a few hours, succeeded by a very considerable degree of heat, consequently bringing another accessory cause of fever into action also. When these three combined causes of fever are permitted to remain without interference, the eruption of pustules on the surface of the body never fails to be considerable. But, on the other hand, when the first supervening cause is early removed by the evacuations of vomiting

and laxatives, while the superabundant caloric is abstracted by free exposure to cold air, the disease at all times proves mild ; in so much is this the case, that, from proceeding steadily on the above principle of abstracting with assiduity these supervening causes of fever, I did not lose a single patient in the inoculated small-pox during a space of above twenty years previous to the commencement of vaccination. I mention this merely as a demonstration of the great importance of this object in practice. The period alluded to is from the year 1774 till 1800, when a near relation of your own was inoculated for the small-pox, the last on my book.

With respect to the measles, the operation of morbid sympathy, from gastric irritation, is here also abundantly evident, acting both as a secondary cause of general fever, and as peculiarly influencing the viscera of the thorax. I wish to

observe to you, that a general impression has prevailed of measles being an infectious disease, peculiarly productive of organic inflammation ; and instances of mortality having ultimately ensued, from inflammation formed in course of the disease, has probably led to a more extensive use of venesection in general practice, than I imagine to be really useful.

That the erithematous inflammation upon the fauces and trachea, in measles, and which is undoubtedly derived from the irritating nature of the infectious miasmata directly applied to them, may be extended by the continuity of the membrane to the bronchiæ and lungs, is true ; but it is also certain, that the organ of the lungs is occasionally influenced in various forms of diseased action, by morbid sympathy, with errors in the digestive organs, more especially when the lungs happen to be previously in a diseased state ; and observation has, at

the same time, shewn, that a weakened state, or a diseased irritability having taken place in a particular organ, renders that organ more susceptible of a morbid sympathetic action from irritation applied to a distant part of the nervous system, than it habitually is, in a state of health; and perhaps the inspiration of the original infection may give this form of predisposition to the membrane of the lungs. That this state of morbid sympathy betwixt the stomach and lungs does actually exist in many cases of measles, I believe to be certain. My belief is founded on the very great relief from pneumonic symptoms received by a free discharge of acrid matter from the stomach and intestines—a relief which can be accounted for from no other law of the animal economy. Repeated bleedings will, no doubt, tend to lessen the vascular action, but probably in no high degree, while the secondary cause of fever conti-

nues to give its irritation to the nerves of the stomach and bowels ; and it is obvious, that venesection cannot act as a means of removing this cause, neither indeed are the more lenient cathartics to be depended on for this purpose ; for, as I have already mentioned to you, although they will to a certainty open the bowels, yet they very frequently pass along and leave the offending cause behind. It is the more active powers of calomel, and antimonial preparations alone, which are here to be confided in.

At these times the *primæ viæ* are always loaded, tending greatly to augment the general febrile state, and also to aggravate the extent and effects of the original erithema of the fauces and trachea. When their free evacuation, therefore, is accomplished early, the result is always salutary ; it, at any rate, tends to lessen the general fever, by removing an accessory cause ; and when the commence-

ment of local affections in the breast is in any degree apprehended, this discharge being made before pneumonia is actually established, (upon the above principle,) serves powerfully to check the progress to pulmonic obstruction. The following case, which has lately occurred, is one in demonstration of this opinion.

Aug. 20th, in the morning.—Miss —, aged 10.—MEASLES.—The second day of the eruption ; it is fully out, and in considerable quantity ; has much cough, with a hoarse croupy sound, and soreness under the sternum ; has severe headache, with thirst, and thick furring on her tongue ; heat great—Pulse 120, rather full.

Although the secondary cause of fever was here in severe action, yet, apprehensive of an approaching pulmonic affection, I directed her to be bled at the arm, and to drink freely of gruel, &c.

In the evening, her pulse was a little

softer, otherwise the same. This being the case, and no local inflammation having as yet commenced, farther than the catarrhus affection, with the view of lessening the supervening cause, I directed a dose of Calomel, and Antimon. Tart.—Calomel, gr. v., Antimon. Tart. $\frac{1}{3}$ gr. to be taken immediately.

August 21st.—The dose last night operated powerfully; she vomited a great quantity of bilious-coloured fluid, and had several bilious stools. This morning the febrile state greatly mitigated—headache gone off—heat and thirst very moderate—the hoarse-sounding cough, and soreness under the sternum, greatly relieved—The eruption is proceeding regularly.—Pulse 90.

August 22d.—Continues better—Pulse 80.

August 23d.—The eruption entirely gone—her pulse natural, and every febrile symptom removed—has no diar-

rhœa—directed to take a moderate dose of Calomel and Jalap. That paleness of skin which sometimes suddenly occurs during measles, said to be striking in of the eruption, and so much dreaded, I believe to arise from the surface spasm, attending an accession of fever, generally from a gastric source, and which a free discharge from the primæ viæ will certainly relieve, and, if applied in time, will probably prevent.

SCARLATINA.—Scarlatina is a febrile state, the primary cause of which is likewise infection by a specific poison. Like measles, it comes on with an erythematous inflammation in the throat and fauces ; but the effect of this virus, directly applied to the membrane of the fauces, appears to be less stimulating than that of the measles ; the inflammation being in general slighter, and of a less vivid red colour, often degenerating into ulcers. From the general phenomena of

this disease, the effect of the poison on the nervous system is evidently debilitating, and of a septic nature, giving a putrid tendency to the fluids, similar to their state during typhus. The ulcers formed on the membranes of the throat, where the direct influence of the infection is first visible, have a putrid appearance; and in the worst cases, the patients die with signs of a dissolved state of the blood. Early after the first symptoms of fever come on, the signs of a loaded state of the stomach are manifested, attended with increase of temperature, shewing that both these accessory causes of fever are in action, which, if permitted to remain unabstracted, will, as usual, by a sympathetic action on the heart and arteries, assuredly tend to aggravate every circumstance in progress of the disease. In addition to the acrimony formed within the stomach and intestines, in consequence of the increased

secretion of their natural fluids, it has been thought, and with much reason, that the infectious miasmata of this disease, by being entangled in the saliva and mucus of the throat, is, along with these, carried into the stomach; and, more especially after ulcers were formed, that the stomach became a receptacle for the acrid fluids exuding from them; thereby adding greatly to the acrimony there already collected, and may perhaps contribute to the effect of spreading erithema through the whole alimentary canal. Scarlet fever appears in various degrees of violence, from slight fever with scarlet eruption, and attended with slight sore throat, to a state of highly putrid fever, with ulcerated fauces. From the great similarity of the general symptoms exhibited in this disease to those exhibited in typhus fever, it will be obvious to you, that the treatment here ought to be very similar to that

adopted to those under typhus ; which is, in the first place, pointed to the mitigation of the two great supervening causes of fever, irritation in the primæ viæ, and excess of caloric, especially to that which is seated within the digestive organs ; the very exhalations ascending from which to the fauces, do, beyond a doubt, tend to keep up the inflammation, and, consequently, the ulcerated state originally produced by the infection. This is best done by repeated emetics, early exhibited ; for which purpose the Antimon. Tartar is preferable to Ipecacuan, and will always be found more efficacious. In mild cases, where there is no ulceration, an emetic is seldom required ; laxatives, with cool air and diluting drinks, is, in general, the whole that is needful, while the eruption takes its natural course. But in bad cases, Dr Withering recommends a gentle emetic to be exhibited every day, and I believe

with propriety ; seeing that, if the stomach has become the receptacle of the ichorous discharge from the ulcers in the throat, in addition to its other morbid contents, if these can be occasionally thrown off as they accumulate, so much the better, as it gradually removes an accessory cause of fever, the excessive action of which is at all times attended with danger. And the other accessory cause of fever, excess of heat, being also moderated in its action by cool air or cold ablutions, antiseptic cordial drinks, antiseptic inhalations and gargarisms, with cinchona, are perhaps the whole which art can farther offer of general aid.

I shall, in the next place, lead your attention to these singular phenomena of disease, attendant on intermitting fever, —phenomena which, I think, also admit of a more ready and demonstrable explanation, from the laws of morbid sympathy, than from any other principle.

The primary cause of this fever, as well as of those already taken notice of, is a peculiar poisonous miasma received into the body, which is, in this disease, understood to be derived from dead vegetable substances in a state of decomposition, existing in marshes, and in moist grounds where vegetable substances are left to putrify ; these exhalations being always most abundant and most active from the influence of a hot atmosphere. In its nature it differs from the septic poison of typhus, in so far that it does not exhibit the same suddenly debilitating power over the energy of the nervous system, which the poison of typhus exhibits from the very beginning ; neither does it appear to act as an assimilating ferment in the circulating fluids, generating in them a something similar to its own nature, which is capable of communicating the disease to another person. On the contrary, its effects ap-

pear to be confined to those individuals alone, who have taken in such a quantity of its peculiar effluvia as is competent to produce its specific effects ; which effects all those individuals are liable to feel who live in an atmosphere impregnated with it.

Intermitting fever is seen to exist, in those districts infested with it, in every degree of violence, from the mildest tertian ague, through its various degrees of violence, even, as some imagine, up to the deadly yellow fever of hot climates.

As a halituous poison, a portion of this miasma must pass into the lungs with respiration, and a portion of it will also necessarily pass into the stomach ; but there is no evident indication exhibited of any thing having been directly received into the circulation, so as to have given permanent stimulus to the heart and arteries, as a primary effect, while very severe derangement is perceptible in the digestive organs, with many dis-

tressing sensations over the body, from sympathetic affections depending upon it. It is unnecessary to enter into a minute description of intermitting fevers, as with this you are already sufficiently acquainted. I wish only to express to you a view of its symptoms, as explicable on the principle of morbid sympathy. The primary agency of marsh miasmata, as a cause of the disease, appears to be applied to the human body through the medium of the stomach and digestive organs ; where, being combined with an accumulation of their natural contents, produced by increased secretions, it, in consequence of the peculiar irritation thereby excited, calls into action an extended chain of morbid sympathies, forming the various phenomena of an ague fit. Admitting this idea as understood to be correct, as I believe it to be, the febrile paroxysm of an ague fit must be considered as a form of gastric fever, de-

terminated to that particular form by a peculiar agency on the system, of marsh miasmata combined with the vitiated secretions contained in the digestive organs. Its attack differs from that of any other form of pyrexia, in this—that in place of slight chillnesses, which are transient, an ague fit commences with a painful sense of cold, and convulsive tremor of the whole frame, of one, two, or more hours duration. The primary irritating cause within the stomach having acquired the height of acrimony which is requisite to excite the general sympathetic influence, violent headache ensues, attended with some confusion of ideas, and the brain itself appears to be the first link of a chain influenced by this operation of morbid sympathy. Its energy appears to be thereby impaired, together with that of the whole nervous system; an universal spasmodic affection is formed, occupying, as it were, the whole

frame ; every moving fibre of the body seems deprived of the nervous influence necessary for the firm healthy discharge of its natural functions, and the whole frame is shaken with a convulsive tremor. While the action of the heart and arteries is accelerated from the gastric irritation, the muscular fibres of the vascular system appear to be at the same time under a degree of spasmodic stricture, and the pulse is remarkably small. The frequent and short respirations exhibit a labouring circulation through the lungs ; and the tightness felt in the region of the heart, with the imperfect small stroke of the arteries, gives a strong presumption that the heart itself, and the larger blood vessels, suffer under the general spasmodic affection, which thereby prevents their full diastole, and consequently an ample pulsation.

The great sensation of cold which attends this stage of ague, is, by the present

theory of animal heat, most probably to be accounted for from the imperfect circulation of the blood ; especially in respect to the restricted form of respiration, whereby less oxygen will be supplied to the arterial blood, and less caloric afterwards evolved than is requisite to support the natural temperature of the body.

After a certain period, this convulsive state is succeeded by spontaneous relaxation, as in every other chronic spasm, and the heart and arteries being liberated from their preternatural constriction, they again acquire their accustomed freedom of action. Remaining still, however, under the influence of a powerful gastric excitement, their action is violent, accompanied with very great heat, and not unfrequently attended also with delirium ; until at last the surface spasm being now also removed, a profuse sweat takes place, which, relieving the body from one

powerful accessory cause of a febrile state, an excess of caloric, the fever, as well as delirium, for a time subsides, to be again renewed after a certain revolutionary interval, as in other spasmodic affections, where the primary cause is left unsubdued. Thus, in the present case, the primary cause still remaining, and continuing to act within the digestive organs, or perhaps augmented during the intervals by a fresh accession of miasma, after a regular intermission, an ague fit is again exhibited as before.

That the primary cause of intermitting fever is seated in the digestive organs, is probable from the Therapeutic practice, which long experience has determined to be the best ; and is greatly confirmed in the conclusions, which, on reasoning from practical experience on the subject, you are necessarily led to draw. In the first place, the great general benefit derived from the effects of repeated emetics

in relieving ague ; by the operation of which emetics, great quantities of offensive matter are always discharged ; and from the circumstance of an emetic greatly lessening the violence of a succeeding fit, when exhibited a short time before its expected approach, it is a fair enough inference to conclude, that something, or a part of something, is thereby thrown off, which had previously acted as a very efficient agent during the preceding paroxysm ; and cases are not wanting wherein the ague has not only been greatly mitigated, but entirely carried off by the frequent repetition of emetics alone ; and this the more especially when the person was also removed from the atmosphere of marsh miasma, to a situation where he did not daily drink in a cause of the disease. But there is no reason to suppose that this great effect is derived solely from the discharge of irritating matter which has been formed in the stomach,

either perhaps from errors in diet, or from natural increased secretions becoming acrid there. Such a state of the stomach may, sure enough, give simple gastric fever, but not a regular ague; consequently it is implied that something more than a collection of acrimonious gastric fluids is necessary to produce a genuine intermitting fever; but this something more, appears to be supplied to those who live in it, by an atmosphere impregnated with marsh miasmata.

In the next place, the circumstances attending the almost specific virtue of cinchona, which long experience has established, in finally removing intermittent fever, are such as lead to the belief that the medicinal effects of that medicine are manifested, and the progress of the disease checked before it is possible that it can have entered the circulation, or have impregnated the blood with its

salutary virtues, by the slow progress through the thoracic duct.

This conclusion, therefore, seems to be authorised,—that its activity is exerted, in the first instance, in the stomach and duodenum ; in which portion of the digestive organs the cause of ague seems to be applied, rather than further down in the canal, and arises from the tonic, and a certain degree of sedative power, which it seems to possess, directly applied to the nerves on the internal surface of that organ, whereby they are rendered less susceptible of morbid irritation from the exciting causes of this fever, and consequently the morbid spasmodic affections derived from sympathetic affinity are also removed. It is observable, too, that the greater the quantity of Peruvian bark which can be applied to those parts at one time during the intervals of febrile paroxysm, in so much is it the more efficacious. This is now a general

rule in practice ; and in confirmation of its being just, I know an instance of intermitting fever being entirely carried off at once by this means. It happened in the case of a man who commonly enjoyed very strong health ; but having an attack of ague, two ounces of Peruvian bark were sent to him by his medical attendant, to be taken at intervals in the quantity of a tea-spoon full every two hours, as usual. He took two of these doses, but, impatient of the irksome repetition of the medicine, he mixed up the whole remainder in a tumbler of grog, and drank it off. His stomach retained it ; he had no return of ague, and required no more cinchona. The great benefit also attending the sedative power of opium, when used in combination with cinchona in ague, serves as a farther corroboration of the same idea.

Organic obstructions in the abdominal viscera are occasionally formed un-

der ague, as well as under typhus and the yellow fever of hot climates. I have before mentioned this to you ; and when occurring in the two last, as being the result of acute inflammation formed by a morbid sympathetic influence, on some or other of these organs, to which in such climates they appear to be peculiarly liable. But under ague, these organic affections are almost constantly of a chronic nature ; and the liver, in particular, seems to be peculiarly liable to suffer in this way, *i. e.* in form of chronic enlargement, rather than in form of hepatitis.

That, in the course of intermitting fever, a powerful sympathetic affinity is formed betwixt the stomach and liver, as well as some others of the abdominal viscera, is rendered evident, from the increased secretion of their contents ; yet it is not an improbable supposition, with regard to the liver itself, that the obstructed state of it, which occurs more

frequently than in any of the other viscera, may, in addition to the sympathetic affection, be promoted by a mechanical cause, in time of the cold fit; for at this time, when the general circulation of the blood seems almost half suspended, it is very reasonable to imagine, that the circulation through the liver by the vena portarum, which at all times is slow, must then be still slower, or, in some of its minute vessels, even stagnated; and this, perhaps, in a degree beyond the power of the returning natural circulation to press forward. Supposing this, then, to be again and again repeated within the substance of the liver by the return of ague fits, it will unavoidably become enlarged in size, although its membrane is not in a state of acute inflammation. The miasma which produces intermitting fever, is said often to remain latent in the system, and to reappear in its effects long after the dis-

ease has been removed. The other instances of certain poisonous matter having remained long in a latent state, and at last become active, I suppose may have led to this opinion with respect to ague. I am rather inclined to think, however, that the recurrence of aguish paroxysm in such cases depends on the remaining visceral obstructions, which had been formed during the original disease, exposing the body to be easily influenced by the application of some slight occasional cause.

On the subject of ague, as connected with the general health of the part of the country where we live, it is deserving of remark, that, here, ague was formerly a most prevailing disease among all classes of the inhabitants; but that now, and for more than twenty years past, it has entirely disappeared, having become a very rare disease among us. This salutary change appears to have taken place in

consequence of the soil having been cleared from a great superfluity of stagnating water, by the drains and inclosures which have accompanied agricultural pursuits ; consequently our atmosphere remains less loaded with exhalations impregnated with marsh miasmata. The condition, also, of the labouring class of people, with respect to their food, clothing, and habitations, is much mended ; they are better paid, and live better ; they enjoy better health, and are consequently less liable to suffer from this species of infection.

But although the quantity of marsh miasmata which is required to produce true ague has been thus withheld, yet there evidently still exists a form of miasma in the air of particular places, powerful enough to produce a febrile state in some individuals. The most frequent subjects of it are the poorest class of the inhabitants, whose constitutions are so

often previously debilitated by inanition and fatigue. It prevails most commonly towards the end of the year, especially if the weather at that time is mild and moist; *i. e.* when exhalation from the surface of the earth is more abundant than happens in frosty weather. The disease appears in form of slow remitting fever, not being propagated by passing from one person to another, and very evidently partakes more of the character of ague than that of typhus fever, for which disease I believe it has not unfrequently been mistaken, with much unnecessary alarm to the public mind. It is often protracted, and this chiefly through neglect, but is seldom mortal; similar to ague in its progress, it spreads, by the application of one general cause, to those whose bodies are at the time predisposed, *i. e.* have become easily susceptible of the disease; unlike to the pestilential typhus fever, where the infection

passes directly from one individual to another, and may be communicated, in this way, to any person who makes a near approach to the sick.

Towards the conclusion of the harvest of every year, there also prevails a febrile disease among the common people, which is obviously a combination of the ordinary catarrhus and gastric fever. It is quite independent of infection of any kind, but to the occasional causes usually productive of which, those employed in harvest labour are peculiarly exposed.

I am, your's, &c.

LETTER XI.

DEAR —

THE next febrile disease which I am to mention is a form of simple fever proceeding from an evident remote cause ; viz. as derived from passions of the mind, creating a quickened circulation and febrile state, by a direct morbid sympathy of the heart and arteries with the mind itself.

The command of the will over the voluntary motions of the body is self-evident ; but the influence here alluded to, is that of the mind in a diseased state, calling certain organs of the body, over which, in a state of health, it has naturally no power, into morbid action, by a sympathetic affinity. The excessive ope-

ration of violent passions will occasionally disorder the whole nervous frame, and, in irritable habits, will frequently produce even muscular convulsions, as happens in hysterical women. But it is also certain, that they, at other times, greatly accelerate the motion of the heart and arteries, drawing the whole vascular system into severe action. A similar morbid sympathy is also at these times extended to the alimentary canal, increasing its secretions, and attended with the secondary class of aggravating symptoms, from this accessory cause; whereby is exhibited a real febrile state of the body, by the operation of morbid sympathy, of which a passion of the mind forms the primary source.

In prescribing for this form of fever, it is obvious, that the same great rule of management is applicable as in those which arise from the causes formerly mentioned, viz. that of endeavouring to

correct, or entirely to remove, the primary, as well as the supervening causes of the disease. The removal of the supervening causes, those of gastric irritation, and excess of heat, will here, as well as in other cases, no doubt, administer much relief. But nothing will so effectually and expeditiously remove the fever as abstracting its remote cause, by removing the original source of mental irritation.

By taking an attentive review of the ætiology of fever, expressed in the preceding statements, in its several various forms and degrees, as explicable on the data of morbid sympathies, I think you will discover a degree of consistency, and a certainty of inference, which is to be discerned through no other source of diagnostic pathology. It is the more to be depended on, because it is not formed upon any assumed or merely plausible data ; such as we observe in the humoral

pathology, or the still more abstract ideal theory of excitability and stimulus ; principles which it is impossible to demonstrate to the senses, and whose supposed operation cannot be satisfactorily explained, and which evidently require that you resign your judgment to an arbitrary authority.

That there is a law of sympathetic affinities existing among the organs of the human body, is a fact which no man presumes to deny, any more than in natural philosophy he would presume to deny the laws of gravitation, since the operation of the one is fully as demonstrable as that of the other. It is one of those phenomena of nature, from which the mind cannot withhold its assent, although the ratio operandi is concealed in obscurity as completely as that of either gravitation or electricity. The truth is, that the animal economy is constantly subjected to their operation ; and there is

no department of the nervous system by which, if certain or peculiar irritating causes are applied, some other department of the same system may not be influenced, so as to draw the organ to which they belong into morbid action by sympathetic affinity. This subsists more decidedly and habitually between some organs than it does between others, and the morbid action is often reciprocal ; as, for instance, a contusion on the head, or certain other injuries offered to the brain, all derange the action of the abdominal viscera, and occasion increased secretion of bile from the liver, with nausea, and bilious vomiting. Again, vice versa, certain acrimonious matter applied to the extremities of the gastric and alvine nerves, gives a variety of deranged actions of the brain, otherwise in a sound state ; and the accelerated pulse of the whole arterious system, from inflammation formed in a small portion of

its capillary branches, is at once perceptible both to the eye and touch. A stone or sand, contained in the bladder or kidneys, gives tremors and vomiting; gastric irritation also, in its turn, gives spasmodic affections of the bladder and kidneys. Offensive fluids in the stomach will excite the rectum to a discharge of its contents, as in diarrhœa; and irritation in the lower intestines will again excite nausea and vomiting. These, as well as other morbid affinities, are also sometimes in action, while there is little, or perhaps no uneasy sensation perceptible at the spot where the irritation is applied.

But although, as I have said, there is no part of the nervous system which may not be excited by morbid sympathy, it is observable, that, of all the organs of the human body, the gastric and alvine department is that which is most extensively and constantly exposed to the ac-

tion of such causes as readily excite these sympathetic phenomena; a surface which extends from the cardia to the rectum, every part of which is provided with nerves of the greatest sensibility. When, at the same time, you consider, that to the sentient extremities of these nerves there is constantly applied such a variety of matter, possessed of various degrees and forms of irritating power, to some part or other of this important organ, there is little reason for wonder, that from the *primæ viæ* this law of the animal economy should be so frequently called into action in form of disease. Accordingly we find, that the extensive influence of the state of the stomach over the whole living frame has been universally remarked. It is evident, therefore, that a knowledge of these phenomena, and the train of morbid actions exhibited by them, cannot fail to dispel much of the obscurity which at-

tends a diagnostic pathology founded on obscure principles, and, consequently, must tend to conduct the mind, upon grounds which are certain, to a demonstrably rational practice. On this account, I recommend the study of the laws of morbid sympathy to your strenuous attention, as a subject of great importance ; more especially, as I have occasionally mentioned to you, that, although sympathetic affections are always acknowledged to exist, yet you will not find their morbid actions essentially included in the general doctrines of systematic pathology. It is now many years since the importance of this subject first drew my attention ; and, as I have advanced in life and in practice, I have been more and more convinced of its truth and importance, from observation in the phenomena of many diseases which I conceive to be most intelligible, and their cure, of course, to be best explained upon these principles.

Having so long entertained these ideas, and been led to act habitually on them in my practice, I received much satisfaction from the perusal of Dr Hamilton's Observations on the Use of Purgative Medicines, as in their spirit they coincide so entirely with my previous opinions. Dr Hamilton, however, merely announces certain diseases as the effect of costiveness, and accumulations of feculent sordes in the primæ viæ, to be matters of fact, and says, that the use of purgative medicines, by discharging these feculent sordes, removes, or greatly ameliorates the disease, without any other medicine; and of this there is not the smallest doubt. But take a view of these diseases through the diagnostic medium of morbid sympathies, and you will quickly perceive a rationale for these facts; that this accumulation draws, by sympathetic affinity, certain distant organs into morbid action, producing symptoms peculiar to the or-

gans so affected, and so becoming the remote cause of a variety of diseases, producing gastric fever in one person, hysteria in another, choria St Vit. in a third, or fixed muscular spasm in a fourth, &c. ; or even general stupor, when the brain itself happens to be the seat of a primary morbid sympathy with the digestive organs. At the same time, the secret reasons why irritation in the primæ viæ should produce choria St Vit. in one, and hysteria in another, &c. &c. are as inexplicable as those connected with any other of the great laws of nature, are as inexplicable as the reasons why sympathies exist at all, only we know that they do exist, and that their existence is demonstrable. “ But it is one thing to prove a fact, and quite another thing to account for it : Indeed there is but one way in which philosophical fact of any sort, when the causes are beyond the reach of observation, can possess more

evidence than a synthetical argument is able to afford ; and that is, when the principle of theory, having been assumed at first only in consistency with known facts, shall be afterwards found to explain, in a simple and satisfactory manner, a varied and complex system of phenomena ;” a rule which is directly applicable, and strongly exhibited in the theory of morbid sympathies.

Thus, you will observe, that in reflecting on the succession of symptoms which take place in a febrile state of the body, by whatever denomination it is known, the great object in practice is to discover the source from whence these symptoms spring ; that is, to discover the remote cause, together with such supervening or accessory causes, as may, in conjunction with the other, be contributing to produce this morbid state of the body. You will also observe, that what is denominated the proximate cause of fever, is,

in fact, nothing more than an assemblage of phenomena or symptoms, which must, and which in reality do, originate from a something else, which has the power of exciting particular organs of the body to a morbid action ; and this something it is which forms what is understood to be the remote or primary cause of disease.

The object of nosological authors appears to have carried them little farther than that of marking the proximate causes or signs of the actual presence of diseases, without leading to a detection of the primary or remote causes, from which these forms of disease have arisen. They appear to have viewed a disease as somewhat similar to a chemical compound, made up of certain integral parts, which is to be analysed, and these constituent parts to be considered either separately or as occasionally combined. The consequence is, that the endless variety of possible combinations of these ingredi-

ents has led them into an almost endless number of distinctions, which are but rarely to be marked in real practice, and which, in fact, in real practice are of little use. Let a student, for instance, be sent to visit a patient, with the nosology in his hand, to direct him in discovering the disease according to its rules and directions, and he shall be either bewildered or led into error nine times out of ten. Of course, that system must be as yet imperfect ; in fact, it is so, but will probably, from the present prevailing spirit, soon assume a more improved form.

LETTER XII.

DEAR —

IN my last letter I expressed to you the essential importance, in practice, of ascertaining the primary or remote cause of febrile diseases ; but the same importance is attached to the investigation of every disease to which the human frame is subject. Let your practical studies, therefore, be founded on the acquisition of a correct knowledge, in the first place, of the institutions of medicine, or a knowledge of the animal economy in a state of health. Consider well, and inform yourself of the structure, use, and healthy operation of each particular organ and department of the complex machine, in so far as they are known. Some of these

being visible, are more easily distinguishable ; and of those which are more latent, inform yourself as perfectly as the studies and discrimination of authors have developed them. And in a more particular manner let me press you to pay a most solicitous attention to the derangements which so frequently occur in the alimentary canal ; since, from this great source of disease proceeds an endless variety of morbid affections, either as it may itself be directly affected, or as it produces sympathetic affections in remote parts ; and as it may also be re-acted on by primary disease seated in some distant organ.

But, in order to your being qualified to interpret these various phenomena correctly, and to read this page of nature right, so as to be thereby directed to the latent origo mali, a careful attention to, and an exact discrimination of, the laws of the morbid sympathies of the system,

I hold as a thing indispensably requisite. This will enable you to connect the signs or symptoms more decidedly with the morbid change, or the cause of these symptoms. They are various and irregular, exhibited through the medium of the nerves, as they are excited to act in a diseased manner in some organ or another of the body, being the effect of irritation applied to a distant part of the same system, and are included in the laws and operations of the *vis nervosa*. In your diagnostic attentions, let your mind be constantly open to a suspicion of these being somewhere in action, especially when you observe the usual signs of a loaded state of the *primæ viæ* to be present ; taking care to discriminate exactly such symptoms as are of this nature, from those which are idiopathic, or which flow in an obvious and direct manner from primary organic obstruction.

This view of the *ætiology*, and many

of the phenomena of certain diseases, as being explicable by the occasional and powerful action of morbid sympathy, I do certainly believe to be just ; and press it on your consideration, not as a favourite theory, but as the result of habitual reasoning, and very long experience, founded on principles assumed in consistency with known facts ; and which you will find capable of explaining, in a simple and satisfactory manner, a complex mass of morbid phenomena, including more of comprehensible consistency on the subject, than any thing else I have hitherto seen. So soon, then, as you have by this means ascertained the real remote cause of a disease with a *ratio* symptomatum, derived from the action of that cause, you are thereby enabled both to direct your prescriptions, and select your medicines with more precision and certainty ; which prescriptions should, on a general principle, be chosen so as to act as di-

rectly as possible upon that remote cause, as well as upon such occasional causes as may have supervened ; always recollecting, as before mentioned, that to mitigate the severity of a symptom is not to cure the disease, which is only completed when the primary cause is removed, and consequently its morbid effects have ceased.

Before I leave the subject of febrile disease, arising from specific infection, I am desirous of calling your attention to that form of epidemic fever, which now and then prevails so universally ; and which, at the end of 1802, and spring 1803, pervaded the whole of this kingdom ;—that is, the epidemic cattarrh, or influenza ; and from the uncertainty of opinion which appears to remain respecting the nature and origin of that disorder, I am inclined to offer you my thoughts on the subject. They are the result of practical observations made in the course

of my professional duty, compared with what I could collect from the reports and writings of others of the faculty ; a profusion of which appeared in all the periodical publications, both during its continuance and for a long time after.

Among the various medical tracts which have appeared on the subject, although they in general sufficiently agree in their descriptions of the attack and symptoms of the disease, yet there is much variety of opinion respecting its nature and the manner of treatment ; much unsystematic statement, much of conclusion, without fair premises, and consequently not a little contradiction ; some alleging that the disease is contagious, others that it is merely epidemic. In their views of prescription also they differ much, yet all of them boast of success—Some of them depending on oily emollient pectorals, while others say that these are of no use, and pay their attention to the relief

of general fever, recommending antimonial and mercurial medicines, with diaphoretics. Some recommend occasional bleeding, and others not, &c. I observe they have sought after a predisposing cause, in the influence of a previous state of the weather, but it is probable that the disease does not depend much, or necessarily, on the presence of a marked predisposition for its production, since it has been prevalent at all seasons of the year, in the heat of summer, as well as in the cold of winter; and hundreds, including individuals of all different habits and constitutions, in different districts, and different towns, have been seized with it almost at the same time.

The approach of influenza, with all its regular as well as anomalous phenomena, is very similar to that of common catarrhal fever, and to some of the exanthematæ; but the general febrile state is more severe than in simple catarrh. Af-

ter some days of vicissitudes of chillness and heat, with general languor, the patient is seized with a cough and some hoarseness, a little redness and watering of his eyes, sneezing and running from his nose, a degree of heaviness in his head, sometimes severe headache, and some frequency of pulse. To these succeed the morbid sympathies which point out great derangement of the digestive organs,—headache, furred tongue, nausea, and weight at the precordia, with slight wandering pains in the extremities, as well as in the trunk of the body ; as also increased general heat and thirst, accompanied with excessive prostration of strength ; the pulse increased in velocity, but remarkably soft and compressible, even in athletic constitutions.

These form the general outline of the disease ; and the anomalous symptoms are phenomena depending on the peculiar morbid action of any such particular

organ as may happen to become more especially affected, forming in them, on such occasions, a secondary disease. I do not intend here to enter on any statement respecting such methods of cure as have been adopted—these, I observe, have been very various—but solely to offer you such general conclusions as reflection on the appearances of the disease have led me to draw, which are shortly these,—That influenza is an epidemic infectious disease, not characteristically contagious. It is different from common catarrhus fever, because it does not arise merely from exposure to the changes of heat and cold in the air, but depends on some exciting cause of disease floating in the atmosphere, by which every person who breathes in that atmosphere is equally exposed to suffer.

That although, as in common catarrh, it exhibits an affection of the adnata, and slight erythema of the throat and fauces,

it is in no greater degree than what takes place, in a similar manner, in some other epidemic diseases, as in measles, &c.

Though it is not essentially contagious in its primary nature ; yet, at the same time, from the assertions of certain observers, candour obliges us to think that at times it may possibly have proved eventually so ; that is, that although, like the small-pox, measles, typhus, &c. the morbid matter absorbed through the medium of the atmosphere in influenza, does not appear, as in these diseases, to assimilate any thing within the body, which possesses so much of its own original qualities, as to communicate the disease from that source to another person ; yet it is, at the same time, supposable, that sometimes a certain portion of the original infection may pass off, unaltered in its nature, from the sick person, so as to be productive of the disease in another who breathes the atmosphere of his body ;

but, I imagine, if this be the case, that it very rarely happens.

Influenza then, I conceive, is to be viewed as an epidemic fever which generally terminates in its own peculiar crisis ; and which crisis is as distinct in its nature as in any of the exanthematæ, the approach of some of which it so much resembles. Small-pox, measles, scarlatina, severally constitute epidemic fever ; the crisis of which are rendered perceptible by a deposition of morbid matter on the surface of the body. Influenza is also an epidemic fever ; the crisis of which, when the operations of nature are not interrupted, is entirely formed by a profuse sweating. I will go farther into the analogy, and say, that in influenza the morbid miasma is either so altered in the circulation, or of so subtile or unstimulating a nature to the excretories of the skin, as to escape from the body along with the critical sweat, without pausing

at the surface like the former ; in which, from the appearances exhibited on the skin, the peculiar disease is readily ascertained, and without which the ambiguity would probably be as great as in influenza.

Influenza admits of being distinguished into the regular and the anomalous disease. What length of time may commonly elapse from the period when the infection is received into the mass of circulating fluids, till the febrile paroxysm is fairly formed, is uncertain ; but, judging from the first appearance of languor, shifting pains, an uneasy sense of cold from the external air, frequent alternate rigours, and flushings of heat, with a little frequency of pulse, it is probable that many days elapse before a true febrile paroxysm is formed. This paroxysm passes through the cold and succeeding hot stages in the space of from twelve to twenty-four hours, after which a most

profuse universal sweat breaks out, which continues, if not interrupted, till every febrile symptom disappears, occupying the space of one, two, or even three days longer, leaving the pulse reduced to its natural standard with respect to velocity, but remarkably soft and compressible, being unnaturally feeble even in the most robust men, and attended with an extraordinary degree of general debility. Thus is the first stage of the disease finished.

Although the febrile crisis may have been complete, and the person of course feels greatly relieved, still there remains what may be considered as a second stage, or rather as sequelæ of the disease; arising from the effects of a load of irritating matter collected in the primæ viæ, or of mucus in the bronchiæ of the lungs, not unfrequently of both, which had apparently been collected there previous to, and during the febrile state. I have

indeed occasionally observed the disease pass on without the bronchial affection, but never without great derangement in the primæ viæ. This accumulation is evidently the result of that sympathetic connection which subsists betwixt the vascular system, the surface of the body, and the abdominal viscera. The symptoms show that it is established early in the disease, and that it acts as an accessory cause of fever, aggravating the power of the first exciting cause during its state of activity. And here it would appear, that in the regular influenza, when the crisis is complete, that is, when the primary infection is carried out of the system by a profuse sweat, and along with it the evolved caloric, that the remaining accessory cause, viz. morbid irritation within the stomach and intestines, is insufficient of itself to keep up fever. This state of the disease, then, remains to be removed after the febrile stage is en-

tirely over, which object, it is obvious, can only be effected by evacuating the offending matter ; and this being accomplished, the natural appetite for food is quickly restored ; a supply of which, with the help of some tonic medicine, and a moderate allowance of wine, at last restores the patient to his accustomed health. Those who are past the meridian of life are most liable to suffer from an increased secretion of mucus in the lungs ; but this, as well as the former, is to be considered as a secondary disease, and treated accordingly.

The anomalous influenza appears to arise from the circumstances attending an imperfect crisis of the fever. These prove the most troublesome to the patient, as well as more perplexing to the prescriber. When the regular process of nature has been impeded, either from a previously debilitated habit of body, or interrupted, through the imprudent con-

duct of the sick, by exposure to any cause which might check the progress of the critical sweat, a partial crisis only is obtained ; and although the accessory cause of fever may have been removed (for the time) from the *primæ viæ*, yet in this case, after a certain undefined period, there occurs a relapse of fever, with all the former evils, most commonly with increased violence. Here the former process is repeated, but with less prospect of speedy relief ; and the defect of a complete crisis at the beginning appears to be, by degrees, supplied by a succession of hot and sweating fits, in the night-time chiefly, till the effect is at last produced. In one person, a febrile heat, and succeeding perspiration, occurred every third night as regularly as in ague ; but this person continued ill for four weeks. And in some individuals, I am informed, for I have not seen so bad a case, it has even degene-

rated into a state similar to that of typhus fever.

But the most formidable of all situations which have arisen, is one to which old people are peculiarly exposed—those especially who are so far advanced in life as to be affected with, or even to have an approach towards, *catarrhus senilis*. In these the increased secretion of mucus in the lungs has been occasionally so great, as to be productive of the state of *peripneumonia notha*; forming, in addition to the above circumstances, a morbid situation, which I find has frequently proved fatal. The only very bad case with which I have had any concern was of this nature, in a gentleman of seventy years of age, of a full habit of body. The natural crisis was rendered imperfect through his own imprudence. He had laboured for nearly two weeks under catarrhal cough and bilious stomach, with excessive languor, and quick feeble pulse. He was,

however, somewhat better ; but, walking out in a cold evening, had a severe relapse of fever the same night, which quickly formed into peripneumonia notha, and carried him off in three days.

With regard to remedies, these necessarily require to be varied, from the state of attending symptoms, and the period of the disease at which advice has been desired. If the critical sweat has already come on, any interference may be hurtful, except in the way of plentiful draughts of warm diluting acidulated drinks, continued till the sweat subsides of itself. After this, the bilious and other irritating contents of the *primæ viæ* are best discharged by the use of antimonial and mercurial evacuants, or saline purges, as circumstances may point out. When the catarrhal affection gives trouble, blisters, and other means of relief in common catarrh, are proper.

The morbid secretions deposited in

the stomach and intestines commonly take place early in this disease, as well as in the exanthematæ; and in this, as well as in the exanthematæ, I have the strongest reason to believe, that an early exhibition of an antimonial emetic, followed with a calomel purge, or repeated doses of Dr James's powder, has had the effect of rendering the febrile state much milder, removing an accessory cause of fever; and therefore, in influenza, it has been my first prescription, when called in time.

As for the catarrhal symptoms which appear at the commencement of influenza, I have never seen them arise to such a height as to call for very particular notice. They seem to depend on the application of morbid miasmata to the membrane of the nose and fauces, and adnata of the eyes, similar to what happens at the approach of measles; and although at a time they may be so considerable as

to require attention, yet, like the measles, they are to be viewed rather as an index of infectious miasmata having been applied, than as forming any definite symptom of the succeeding disease.

LETTER XIII.

DEAR —

THE extreme prostration of strength which comes on so early, and continues so long after every other complaint has vanished, is a very striking feature of influenza. It appears to commence from the first absorption of morbid matter ; it takes place long before the appearance of a real febrile state, and continues long after every febrile symptom has gone off. That it is not of the nature of that weakness which flows from a deficient quantity of nourishment, is evident ; it rather partakes of that form of debility which arises from some poisonous matter, applied to the vital powers, and weakening their action ; neither does it appear to

be similar to the paralytic weakness which certain narcotic poisons exhibit, when applied to the extremities of the nerves of the stomach, for instance, and which disappears on that poisonous substance being removed. From its permanent and tenacious nature, and from its receiving so little palliation from the use of cordials of any sort, I have been led to think, that it may be the result of some decomposition of the blood itself, whereby it is deprived of a portion of its oxygen—that vital principle which is indispensable for the support of due vigour in the system—in consequence of the absorption of a morbid gas. Future experience, perhaps, may help to determine this ; in the meantime, the idea is rather supported by the soft compressible pulsation of the arteries ; as also by the uniformly soft texture observable in the blood, when extracted, with the permanent general debility which seems to

be induced by it. But be this as it may, I have observed, upon the whole, with respect to the issue of the disease, that those who have retired to bed at the beginning, and have remained there for some days defended from any imprudent exposure, which might prematurely give a check to perspiration, have passed through it with the greatest safety, and have had the best recoveries; whereas those, who, believing themselves not to be so very ill as to render confinement needful, have, although very languid, followed their usual occupations, have also at last generally endured a severe attack of fever, with proportional difficulty in recovery. Some I have seen, where the excitement of the system to this critical evacuation was so powerful as to produce a bursting out of sweat, as it was expressed, over the whole frame, which even an exposure to the open air had not the effect of checking; on the

other hand, great numbers have passed through the disease with very little inconvenience.

In what the predisposition consists, which renders one person to be more susceptible of an infectious disease than another, or why the same person shall repel infection at one time, and be so easily acted on by it at another, remains unknown. But if it is really so, that the infectious miasmata of influenza act upon the oxygen of the blood, then those in whom oxygen is most deficient should be in all likelihood most liable to catch the disease, and of course be most violently affected. This idea naturally leads to a reasonable object in prophylaxis; which is, to adopt a mode of living that is calculated to produce a supply of oxygen in the system, such as the practice of an early exposure to the fresh morning air, and retiring early to bed at night; daily occasional draughts of acidulated

liquors ; such as lemonade and water acidulated with nitric acid. Fresh animal food, with wine and water, fumigations, and inhaling the effluvia of aromatic vinegar, may also be useful.

To those far advanced in life, the influenza has been most severe in its effects, sometimes fatal. In the medium of life, it is less formidable in its effects. I have seen and heard of very few children affected with it ; or, at least, it has so slightly affected them as scarcely to be distinguished from a common cold.

Thus you see, that, in this view of the matter, the disease called influenza, instead of being merely a local catarrhal affection, is, in fact, a febrile disease, acknowledging for its remote cause certain morbid miasmata inspired along with the atmospheric air ; and which, although extensively epidemic, yet gives no certain traces of communication from one person to another, by having generated

in the body a matter similar to the infection received, and which, having been inspired by another, will communicate a disease to him precisely of the same kind; *i. e.* it is not contagious; and, considering the rapid manner in which the epidemic infection occasionally spreads, even over whole countries in the space of a few days, it is evident that it is conveyed by a current of the atmosphere, and derives its origin, exclusively, from some casual source, capable of impregnating the air which we breathe with the specific poison of this malady.

With regard to the real source of this infection, that remains, in common with that of most of the other infectious diseases, a matter of conjecture only. One thing, however, is certain enough, from the circumstances attending its gradual and regular progress; that a large body of the atmospheric air, near the surface of the earth, has become impregnated

with gaseous effluvia, possessed of the power of producing this specific febrile disease, in those who are exposed to inspire it. This body of air, then, so loaded, travelling by the ordinary course of the wind over the surface of the earth, communicates its baneful influence to such of the inhabitants as breathe in it as it passes along; hence the reason why its appearance is so regularly progressive; hence also the reason why its attacks, or rather the circumstances of its attacks, are so different from those of a real contagious disease; for, in place of gradually passing from one person to another, in proportion as these persons shall associate together, the inhabitants of whole towns and large counties are often affected with influenza almost at one and the same time, or perhaps in the space of a few days, as they shall happen to be exposed to the current of noxious air, *i. e.* as the stream or its

branches, as directed by the wind, shall happen to reach them. That this is no extravagant supposition, is illustrated, or rather demonstrated, by the instance of the deleterious effects communicated by those noxious winds on the coasts of Africa, as well as in other quarters, which come loaded with infection, consisting of effluvia exhaled from the swamps and masses of putrid vegetable matter, and conveyed by the wind from the interior of the continent ; giving also a specific disease to those who breathe the air charged with it.

But it is very certain that the mineral kingdom contains, and does occasionally emit, gaseous effluvia inimical to human life, as well as the animal and vegetable kingdoms ; and although these mineral gases, such as the carbonic and hydrogen gas, both of which are thrown out in great quantities from crevices in the earth in volcanic countries, do generally exert

their noxious influence, either by suddenly destroying the mobility of the nervous system, or else by suffocation ; yet there is no perceptible reason why certain of these effluvia may not carry along with them, from the interior of the earth, a combination of other gaseous matters, possessed of the power of exciting fever, and of uniting with the oxygen of the blood, as before supposed. There is indeed the utmost reason to believe, that from such a source as this the infection of influenza really proceeds, and exists in that state of the atmosphere which precedes, or follows, the phenomena of earthquakes and volcanic eruptions ; and when you consider that these mineral emanations, when thus accumulated in the atmosphere, covering volcanic districts, must necessarily take the occasional direction of the winds, a reasonable ground is afforded for believing, that from hence issues the stream of in-

fection which has sometimes traversed the whole continent of Europe, and which, at other times, has only visited particular districts, as the infectious mass, or only a part of that mass, has happened to be directed by the currents of air. It appears also, that it is not so easily diluted or weakened in its powers by a mixture with common air, as the poisonous miasma from the other two kingdoms, as is shewn by its having pervaded such immense tracts of country, unimpaired in its activity. In the Medical Essays of Edinburgh, vol. ii. this epidemic disease of 1732 and 1733 is said to have spread itself all over Europe, and also to have infected the inhabitants of America, from New-York southward to Mexico and Peru ; so that it was, perhaps, the most universal disease upon record.

In prosecution of this idea, I presume to think it probable that the violent and extensive influenza of 1782, and 1783,

which, having begun far north, gradually extended itself southward over Europe, was the effect of mineral exhalations from the volcanic mountains of Iceland and Norway, previous to their terrible eruptions in June 1783 ; exhalations which impregnated the atmosphere of the north of Europe with a thick misty haze for some months, through which the sun appeared of a strong red colour.

Again, The influenza became epidemic in Europe in the years 1802 and 1803 ; but in June 1802, an earthquake had nearly destroyed Crema, in Italy ; and in 1803 another earthquake occurred in Turkey, near Constantinople ; and the disease accordingly approached us from that quarter. We heard of its having passed over Italy, part of Spain, and France, before it reached England. All this is indeed much a matter of conjecture, but I think it a very probable one ; whether it is the real state of the mat-

ter or not, the circumstances are at least singular and deserving of farther observation. In corroboration of this idea, however, it is worthy of remark, that of twenty-five instances of epidemic catarrh enumerated in Dr Cullen's synopsis, on comparing their dates with the annals of remarkable events, I find that twenty-one of these are nearly connected in time with volcanic eruptions, earthquakes, or violent storms in the atmosphere, which have either nearly succeeded to, or shortly preceded, the disease.

LETTER XIV.

DEAR —

MUCH as the study of medicine has been improved by the arrangements of nosology, yet, as you proceed in practice, you will more and more discover that there do exist many forms of disease, the phenomena attending which you cannot bend to artificial arrangement, and consequently you will be led to hesitate with respect to the treatment attached to them. Of this number, the febrile disease of acute rheumatism is to be esteemed as one. It is therefore to the nature of this disease, and certain morbid sympathies attending it, that I propose at present to lead your attention.

The term rheumatism, is assumed from the humoral pathology, and is a mere name to which no defined idea is really affixed ; it is even made to include a variety of complaints, especially those attended with shifting pains, the nature of which are very dissimilar.

Acute rheumatism is a febrile disease, ranged in the order phlegmasia, and has currently passed as a genuine inflammatory disease, and of course been habitually treated as such. This view of the matter, however, I cannot help thinking is incorrect ; but while I point out to you in what respects I conceive it to be so, I shall avoid any discussion on the opinions of others, as I only mean to offer to your attention what reflection has impressed on my own mind on the subject.

I have formerly remarked to you the morbid sympathies which are exhibited in the course of typhus fever, as a primary disease, when its course was unat-

tended by organic obstructions ; as also, when, by a chain of sympathetic affinities taking place during that course, organic obstructions are established in some of the viscera, or within the head, forming a complex disease of a most hazardous and deadly nature. I have also considered the morbid sympathies which constitute the phenomena of simple gastric fever, which generally runs its course with little danger, but which at other times is greatly aggravated by the action of certain morbid sympathies, whereby painful organic obstructions are excited, forming a secondary disease of an inflammatory aspect.

In contemplating the ætiology of a morbid state of the system, that peculiarity of constitution observable in the animal economy, understood by idiosyncrasy, ought never to be lost sight of. It consists of a predisposition, whereby a susceptibility is given to individuals, of

being subjected to certain modes of disease, arising from the application of occasional causes, by which another person, not possessed of that peculiarity, would either be not affected at all, or else affected in a different manner.

In what this peculiarity consists, I believe it is impossible to discover. But it appears certain, that, in individuals of a certain idiosyncrasy, while labouring under gastric fever, a powerful morbid sympathy is called into action, and becomes established betwixt the irritated digestive organs and the ligaments of the joints, the adjoining tendonous expansions, the membranes of the muscles, and occasionally the muscles themselves; often forming organic obstructions, and exhibiting all the severe phenomena of acute rheumatism. That a peculiar idiosyncrasy does actually exist in those subject to rheumatism, is demonstrated from this circumstance amongst others, that rheu-

matic phenomena are not excited promiscuously in all who are equally exposed to the same morbid causes ; and that particular individuals never escape being affected with rheumatism when so exposed, however frequently that application may be repeated.

The disease is distinguished into acute and chronic rheumatism. By the first, is understood a painful state of certain articulations, or muscular parts, attended with a degree of swelling around these joints, accompanied by fever ; and, by the second, a similar painful state of the joints or muscular parts, without pyrexia.

Rheumatic fever commences with languor, rigors, sometimes headache, thirst, furred tongue, heat, and quick pulse, which gives a full or smaller pulsation from the muscular tone of the patient, exhibiting at first all the phenomena of gastric fever. After a certain indefinite

time, a few hours perhaps, or at other times the space of some days, after the time when these symptoms began to appear ; one or more of the joints, especially the larger joints, or perhaps some muscular part, becomes pained ; these pains, in course of the disease, frequently shift their place, generally leaving the former in a comparative state of ease, and somewhat swelled. The disease has nightly exacerbations, often attended with profuse sweating, which affords little relief ; its duration is very uncertain, and sometimes is extremely tedious.

A continued application of cold to the surface of the body, or to some part of the body, especially when heated, and particularly the exposure to frequent vicissitudes of heat and cold, are held out as being the chief occasional causes of acute rheumatism, and justly so. But you will recollect, that an exposure to

these circumstances, is, in reality, the most powerful agent in creating an increased secretion from all the secreting appendages of the digestive organs, and thereby of producing a morbid accumulation within the cavity of the intestinal canal, where these secretions, by becoming acrimonious and irritating, may act as a cause of gastric fever in any person ; but it is almost exclusively in those who have the above predisposition that the phenomena of rheumatism are thereby exhibited. It is no doubt true, that long exposure of a limb to great cold may give local inflammation to a joint of that limb by direct stimulus, as a primary disease, with some rheumatic appearances, but in such a case the disease is more fixed to a part, and not so desultory as the former ; neither does one instance of this nature occur for many instances of the other.

Rheumatic fever being arranged in the order phlegmasiæ, it may be right here to refer you to what has been formerly said on the subject of acute inflammation. What is there stated respecting local inflammation, as occasionally proceeding from indirect stimulus produced by morbid sympathy, with irritation within the primæ viæ, is equally applicable to acute rheumatism, and it offers no objection to this idea, that the redness, or circumscribed tumor of phlegmon, is not exhibited in rheumatic swellings; because, in the first, the proximate cause of inflammation is presumed to be seated in vessels naturally carrying red blood, whereas, in rheumatism, it would seem to be seated chiefly in the serous and colourless lymphatic vessels.

The pathological view of rheumatic fever, as taken from these preceding considerations, naturally resolves itself into

this : Gastric fever having been excited in a person possessed of the rheumatic idiosyncrasy, it so happens, that by degrees a sympathetic spasm, connected with the irritation in the digestive organs, becomes fixed on some part of the membraneous expansions of one or more of the joints ; a space of some days, or at other times of only a few hours, commonly elapses betwixt the first symptoms of fever and the accession of pain ; at other times, some shifting pains are perceived in particular parts several days before the febrile state is completely formed ; a space which has very properly been termed the latent period. But, by a law of morbid sympathies, when a sympathetic spasm is fixed on a firm membrane, that membrane will soon become inflamed ; a circumstance which on this occasion accordingly happens, attended with great pain, and a diffused

swelling around the joint, most commonly colourless ; but this organic obstruction seated on these membranes, forms a secondary disease, and on the present occasion acts as an accessory or supervening cause of aggravating the febrile state, and consequently serves to augment the violence of all the preceding symptoms.

The sympathetic spasm, now seated on the membraneous parts surrounding the joints affected, appears to be of the chronic kind, giving paroxysms of violent pain and periods of remission. These painful paroxysms are distinguishable from the constant, and comparatively moderate, pain arising merely from the organic obstruction, which is in general very bearable, though greatly aggravated on attempting the smallest movement of the limb ; whereas the periodical painful fit comes on once or twice, perhaps, in the

twenty-four hours, especially in the night-time, frequently shifting its place without any apparent cause. It does not depend for its excitement either on the position or on the movement of the limb ; and often leaving the joint which was first affected, it becomes equally violent in some of the others, exhibiting there the same appearances as on the former, and again frequently returning to the part first attacked.

There evidently appears the greatest difficulty in the attempt to account for the nature of the appearances of this extraordinary disease, or at all to comprehend them as explicable by any known or demonstrable laws of the animal economy, excepting by the laws of morbid sympathy. But, when viewed through this medium, it appears, that the swelling around the joints, with inflammation of their surrounding membranes, is evi-

dently a secondary disease, depending on sympathetic action excited in them by an irritation seated within the loaded primæ viæ.

This opinion is greatly corroborated by a practice founded on these principles, as exhibited in a few cases which I will afterwards subjoin.

I am, your's, &c.

LETTER XV.

DEAR —

IN farther prosecuting the subject of acute rheumatism, you must observe, that it is for the secondary disease that we, in general, are called on to prescribe, advice being seldom required till after the organic obstruction is fairly established ; and, in fact, it is to the removal of this local inflammatory affection that the prescriptions of the present practice are principally directed. For accomplishing this, a strict antiphlogistic course of management is enjoined, including large bleedings, &c. with gentle laxatives ; the last, however, with no other view than, as they are supposed to be cooling in their

nature, with the effect of preserving the bowels open, while the primary remote cause may, nevertheless, remain lurking in the *primæ viæ* uninfluenced, and so is left to continue its action with full vigour ; consequently, the daily repetition of the spasmodic paroxysm depending upon it ought, and, indeed, to a certainty does, tend to keep up the local inflammation on the sympathising membranes, or even to extend it. The permanent action of this primary cause will also render less efficient the use of any antiphlogistic proceedings, which in that case will, by increasing the debility, and irritability of the system, tend to protract the disease.

Acute rheumatism in its progress appears to include two stages of disease ; the first of which is gastric fever, attended by a painful state of the membranes surrounding certain joints excited by a spasmodic affection fixed on them, in

consequence of morbid sympathy, with irritation in the *primæ viæ*.

The second stage is formed by an inflamed state of these membranes, created by the continued action of the same sympathetic affinity ; which inflammation is occasionally so considerable as to produce effusions into the cellular membrane, and even the bones of the articulations become sometimes inflamed, eventually giving ankylosis, and other diseases of the joints.

In the treatment of acute rheumatism much attention is due to the state and circumstances attending the primary gastric fever, as upon the prudent management of it a successful treatment of the secondary disease eventually depends. Experience has supported the opinion, that, in proportion as the primary cause of disease is removed, the sympathetic effect on the membranes of the joints begins also to subside ; that, if this pur-

pose is accomplished at an early period, it may nearly prevent any organic obstruction from being formed ; that, when obtained at any period, it may greatly tend to retard the inflammatory process ; and also that, without its aid, the usual means of relieving the inflammatory state of the ligaments will prove very inefficient.

In order to accomplish the first of these objects, the most free evacuations from the stomach and intestines are required, and the patient generally bears them well. This object, as I have remarked to you on other occasions, is best accomplished by the help of antimonial emetics, as the Antim. Tartar, and calomel, as a laxative. These may be administered either separately or combined ; and when calomel requires any aid as a laxative, tartarite of potass, or phosphat of soda, are the most useful of the neutral salts. These require to be

repeated at intervals till the signs of a loaded state of the primæ viæ shall disappear, or at least shall have become greatly abated. Anodynes, which have the effect of suspending spasm, and of procuring a state of rest, are useful from the beginning; but their usefulness is most eminent after the primary irritation is lessened. Free perspiration is beneficial, as on other occasions, in lessening febrile heat, but does not appear otherwise to influence the causes of this disease.

The *modus operandi* of medicines on the human body is but little understood, especially of those which are not evacuants, yet there are certain articles of the Materia Medica, the effects of which we can as entirely trust to as if their modes of acting were more intelligible; such as mercury in syphilis; opium in relieving spasm, and other painful diseases; and cinchona in ague as well as in all painful

intermitting diseases. This salutary effect of the last, I have, in a former letter on the subject of ague, mentioned as being derived from a certain sedative influence impressed on the nerves of the stomach and bowels, removing their morbid sensibility to the irritating powers presented to them.

A similar thing undoubtedly occurs in the case of rheumatism, where cinchona has been found so highly useful; and, setting aside any conjecture respecting its manner of acting on the system, the fact is, that it has very often, though not always, proved efficient in the cure of rheumatism, as has been experienced by other physicians, particularly by Dr Fothergill and Dr Haygarth. For myself, after the *primæ viæ* have been sufficiently cleared, I have generally found that the pulse was so much reduced as to admit of the still superior tonic powers of steel; and I usually, in such cases, com-

bine steel with cinchona with the best effects, using an opiate every night.

The precise time of accession of the secondary disease, it is very difficult to mark ; it becoming established at various and uncertain periods after the painful stage commences. Some cases occur where real inflammation appears never to be formed ; but the colourless capillaries of the membranes being alone included, the pain at the joints is attended only by a slight colourless swelling, which, along with the pain, disappears with the primary cause of the disease. As there is seldom any erythema on the surface, the presence of inflammation of the ligaments, &c. is chiefly to be discovered by the violence of the local symptoms, together with the state of the pulse.

If the pulse is very strong, a general bleeding may be necessary to lessen the violence of vascular action. But it does not appear, from experience, that repeat-

ed large bleedings act with beneficial influence on the seat of the organic obstruction in this disease ; more dependance is to be derived from topical bleedings, and fomentations, a little more than blood warm, covering the parts with warm flannels in the intervals. An anodyne poultice, of the same warmth, is the most useful form of fomentation, containing, for instance, some hemlock powder, or hemlock powder with some opium added ; for, when these are united with moisture and warmth, and assiduously applied, they tend greatly to relieve pain, and relax spasm, in the muscular fibres.

It is worthy of remark, that, in cases where the usual antiphlogistic course has been applied without success, greater benefit has been ultimately derived from the use of calomel and opium, which, as combining the process of evacuation from the intestines, with the sedative powers of opium, is well calculated to fulfil the

above indications of cure, and serves to corroborate their truth.

The treatment, founded on this view of the pathology of acute rheumatism, is illustrated in the few annexed cases.

August 6th.—A man, aged 30, after having been unwell for two weeks with lassitude, impaired appetite, nausea, thirst, and parched tongue, five days ago had a short feverish fit.—He has not kept his bed, though affected with shifting pains in his limbs and arms, attended by transient rigors. Last night, in particular, the pains in his joints were very severe, accompanied with much feverish heat and sweating. At present, the thirst great, tongue very much furred, with bad taste, and weight at the precordia.—*R* Emetic ex Tart. Antimon.—Item, Haust. Anodyn.

7th. Vomited a great quantity of bilious, and other irritating matter.—The pains in his joints, particularly in his right knee, loins, and arms, very severe,

and often shifting—no swelling—heat and thirst great.—Pulse 110.—℞ Calomel. gr. v. ft. Pil. to be taken immediately.—℞ Tart. Potass. ʒ iij. in aq. Calid. ʒ iv. solut. to be taken two hours after the pill.—℞ Haust. Anod. to be taken at bedtime.

8th. The laxative worked violently, and discharged much offensive bilious matter—the pain chiefly confined to his knee, where it is considerable; and, upon the whole, had a much quieter night.—Pulse 92. Complains a little of uneasiness in his stomach.—℞ Confec. Aromat. ʒ j. Spt. Lavar. C. ʒ ij. aq. font. ʒ v. a table spoonful occasionally.—℞ Haust. Anodyn. ut antea.

9th. Has had a great deal of very severe pain in both his feet last night, with much heat—perspires freely, has weight at his stomach, parched tongue, and thirst. ℞ Emetic ex Antimon. Tartar u. a.—℞ Haust. Anodyn. u. a.

10th. Vomited again much acrid fluid, and some bile. The emetic did not purge him.—Pulse still 92. The pains more moderate.—℞ Pilul. Aloet. cum Calomel. No. vj. one to be taken every morning, with two table spoonfuls of the solution of the Tart. Potass. after each.—℞ Haust. Anodyn. ut antea.

11th. Had two acrid stools yesterday, general heat less, sweats freely, his thirst remains.—Pulse 88, and less full.—Repet. Pil. et Solut. ut. a.—℞ Haust. ut a.

12th. His dose yesterday gave him much nausea. He at last vomited a quantity of very acrimonious, green-coloured, bilious fluid. In the evening was greatly relieved; he is cooler than at any former time.—Pulse 86. Is taking some food, and all the pains mitigated—Give him frequent supplies of light food, in small quantities, broths, thick gruels, &c.—℞ Haust. Anodyn. ut a.

13th. Had two bilious stools in the course of the day, but became more restless in the evening, with a little stomach nausea. He took his draught and had a quiet night.—Pulse 82—Heat moderate. Continue to give him nourishment.—℞ Haust. Anod. u. a.

13th. In the evening. Has had a constant sweat upon him all day, and a natural stool—skin cool, tongue much cleaner.—Pulse 80; but complains of weight at the precordia. Cap. Pil. Aperien. ut antea, to-morrow morning.

14th. In the evening, greatly better, has had three stools to-day. His skin cool.—Pulse 80, and natural—pains almost entirely gone off. Takes food better, and feels much general ease.—℞ Haust. Anodyn. ut antea.

15th. Rested well—pains continue more moderate.—Pulse and heat as yesterday.—Is relishing food.—Cap. Decoct. Cin-

chon. $\frac{3}{4}$ iss. every two hours.— \mathcal{R} Haust. Anodyn. ut antea.

16th. Was out of bed yesterday, and walked across the room without increasing the pain. Contin. Decoct. Cinchon. et Haust. u. a.

19th. Continues better—is free from pain—rested well last night without the draught.—His appetite for food daily mending. Contin. Decoct. Cinchon.

23d. Continues better. Contin. Decoct. Cinchon.

27th. Recovered.—No stiffness left in the joints.

October 10th. Mrs ———, æt. 40, complains of severe pains in the joints of her limbs and arms, especially occupying the knees, stretching up along the outside of her thighs ; her wrists, elbows, and shoulders, are also much pained, which, spreading from her shoulders along the pectoral muscles, gives great distress in attempting to move her body ; the knees and

wrists have a colourless swelling, and the pain is greatly aggravated on attempting at the smallest motion, being always most severe in the night time.

She is affected with short vicissitudes of cold and hot fits, succeeded by sweating—Has great weight and distension of the precordia, with some nausea, thirst, and her tongue is extremely furred.—Pulse 80, and soft—Belly bound.

She was delivered of a dead child in the beginning of August, but had a slow recovery, accompanied with dyspeptic complaints ; and being still weak, she was advised to use the cold bath about the middle of September ; when rheumatism first began to affect her, and it has continued increasing till the present time. She has been using a diaphoretic mixture, and repeated mild laxatives, by the advice of a medical gentleman, and occasionally an opiate at bed-time ; large doses of which had produced no percept-

ible sedative effect whatever.—℞ Emet. ex Antimon. Tartar.—℞ Haust. Anodyn. ℞ Calomel, gr. vj. Pulv. Jalap. gr. xxth. ft. Bolus.—One of these doses to be taken every other morning, and the anodyne draught every night.

18th. She endured considerable distress, from being moved to the necessary posture for the operation of the medicines, to which she submitted with great firmness. She vomited much sharp-tasted and bilious matter ; her stools, by the laxatives, have been dark-coloured, and very fetid. The rheumatic pains have been much mitigated till the 16th, when she had a slight feverish paroxysm and a return of the pains ; her tongue is still furred, with bad taste in her mouth—some nausea, and restless nights. ℞ Emet. ex Antimon. Tartar, ut antea.—℞ Pil. Aloet. c. Calomel, No. xij—Two to be taken every morning—Continue the Anodyne every night.

23d. The emetic and laxative pills have operated well, and she again threw off much bilious and other offensive matter ; she is, however, not much relieved, although the pills have moved her twice a-day.—Repet. Emetic. ut. a. ℞ Calomel, gr. vj. ft. Bolus to be taken in the morning.—℞ Tart. Potass. ʒiij. aq. Calid. ʒiv. ft. Haust. to be taken four hours after the bolus.

28th. The emetic on the 23d operated powerfully, and brought off a great quantity of very offensive brown-coloured tough fluid. The laxative was also active ; and the discharge from her bowels has been more natural in its appearance during the succeeding two days—the rheumatic pains and swellings greatly relieved, being almost gone. On the 27th she had a small relapse of pain and fever ; to-day she is again somewhat better, the pain occupying her shoulders only ; she is cool, and pulse 86. Repet.

Emet. et Cathar. u. a. \mathcal{R} Haust. Anodyn. ut antea.

31st. She still vomited much acrimonious fluid, as well as voided offensive stools—this day every way better. The pains give her little trouble ; her tongue clean, appetite improved, and has quiet nights ; the discharge from her bowels by the laxative pills more natural. Contin. Pil. Laxativ. et \mathcal{R} Pulv. Cinchon. 3vj. Carbon. Ferri \mathfrak{z} ss. Canell. Abb. Pulv. 3i. m. Syr. Com. q. s. ft. Elect.—a small tea-spoon-full two or three times a-day.

Nov. 15th. Continues better—Is quite free from pain.—Repet. Elect. Robor. et Pil. ut antea.

When advice is applied for in time, there appears very little doubt that an early exhibition of the same mode of treatment will check the formation of organic obstruction at its commencement, and most probably prevent the establishment of the secondary disease

entirely, as, it is presumable, happened in the following instances.

July 3d.—J. M. æt. 40. Complains of a violent pain in his shoulder, occupying from the shoulder joint down to the middle of his arm upon the deltoid muscle; it is increased by pressure or motion, and the part is in a small degree swelled—Has been under considerable distress, from this cause, for five days past, but during the last forty-eight hours the pain has been violent. During this period he has been affected with languor, weight at the præcordia, want of appetite, furred tongue, thirst, and transient rigors—Pulse 90.—℞ Emetic. ex Antim. Tartar, item ℞ Haust. Anodyn.

4th. Vomited plentifully, throwing off a great quantity of sharp-tasted phlegm, and some bile; rested quietly in the night, in the course of which the pain of his shoulder became much mitigated, and is continuing better; at one time,

during the night, the pain moved to the point of the scapula, and continued violent there for about half an hour, when it subsided. His pulse is natural, and he is taking food.—℞ Calomel. gr. v. Pulv. Jalap. gr. xx. Pulv. Gambog. gr. iij. m. ft. Bolus.

February 5. Had several very bilious stools from the bolus; the pain in his shoulder continues easier, although it has, since yesterday, been frequently affected with severe pain for a few minutes at a time; no pain at the scapula; but this morning had a severe fit of pain for the space of an hour, from his knee down to the ankle; has still some remaining weight at the præcordia, and his tongue not quite clean.—℞ Calomel gr. vi. Antim. Tart. gr. ss. Pulv. Jalap gr. xv. ft. Bolus. Statim sumend. Cap. Haust. Anodyn. H. Som. u. a.

February 6. Discharged plentifully of

offensive matter both ways—Is to-day free of complaint.

September 30.—W. A. æt. 17. Complains of violent pain in both his ancles, and one of his knees, accompanied with a small degree of swelling; the pain comes on with increased violence at intervals, and always greatly aggravated by motion of the joint. For some days before the pains commenced he had laboured under languor, some heat on his skin, impaired appetite, thirst, and furred tongue—Pulse 90.—℞ Calomel, gr. iv.—Antimon. Tartar, $\frac{1}{3}$ gr. m. ft. Bolus.

October 1st. The bolus brought up a mouthful or two of bilious matter, and purged him thrice; the pains have left his ancles, and occupy his knee chiefly—in other respects much the same.—℞ Bol. u. a. cum Antimon. Tartar. gr. ss.

2d. Vomited plentifully with the bolus, a great quantity of bilious matter

and had three large offensive stools—
Pains greatly mitigated.

4th. Continues easy.—℞ Bol. ut a. sine
Antimon. Tartar.

7th. Free of complaint.

With respect to topical applications in cases such as the above, they are seldom necessary in any way, further than a covering of fine flannel. These exhibit that form of acute rheumatism, which most frequently occurs where the seat of the pain is not in the capsular, or other tense ligaments of the joints, but is more superficial; the sympathetic spasm laying hold only of the tendonous apponuroses and membranes of the muscles, both of which are less liable, as formerly observed, to inflammation from morbid sympathy, than more tense membranes are. The swellings are colourless, or at least nearly so, and appear as if they were formed partly from a deposition in the cellular membrane, and partly from mere disten-

tion of the colourless capillaries ; seeing that, as soon as the pain and accompanying stricture in the membranes subside, the circulation through them being restored, the swelling subsides also, leaving neither thickened ligaments nor enlarged articulations.

But the most formidable shape of the disease happens when the sympathetic spasm, which introduces the secondary disease, is seated upon the more firm and tense capsular, and other ligaments immediately binding the articulations ; as upon these, from a law of the morbid sympathies, inflammation will very quickly become established, exhibiting a most excruciating form of rheumatism. It is on such occasions that, in addition to the treatment as above pointed out, topical bleedings, fomentations, &c. are especially called for. But I must here again repeat it to you, that you must expect little permanent benefit from these, while

the primary cause seated in the digestive organs remains in action ; and, in spite of all that can be done, a permanent thickening of these ligaments, and imperfect action of the joints, and occasionally even ankylosis, remain after recovery.

In two cases which terminated in this way, both of them proved severe and tedious, arising, I believe, chiefly from a late attention to the primary disease. One was that of a servant girl, to whom I was very late of being called. She was, at the same time, very unruly, so that a regular system could not, from that cause, be pursued with her. The pain occupied her wrists and elbows at different times, particularly one of her elbows was greatly swelled and inflamed ; and what I wish to remark to you is, that this inflamed painful state did not subside till her tongue became clean ; the weight at the præcordia and thirst

went off, and her appetite for food became mended ; demonstrating that her stomach and intestines were relieved from offensive matter. The inflammation, however, had been extensive ; for, after recovery, the joint remained in a state of complete ankylosis. The other case is that of a young lady, who had been ill for a week before I saw her. The pain, which was very severe, and the swelling, which was very considerable, were seated upon her knee, and never afterwards shifted ; it was attended with great local heat, but nothing erythematous on the surface. She had also much fever, accompanied with all the signs of loaded *primæ viæ*. A periodical accession of pain was distinctly marked, and perfectly distinguishable from that habitual form of pain, which depended alone upon the existing inflammation of the capsular ligament.

The latent period, at the beginning, had been nearly two weeks, during which

time she had been affected with occasional headaches, languor, impaired appetite, slight rigors, and other signs of gastric affection. In this state she had been accidentally led, a few days before the attack, to use the cold bath, which she thought increased the general uneasiness, and had been heated with dancing the night before she was seized. It came upon her in the form of a spasmodic tightness in the ham and around the joint, which gradually increased, and in a few hours an excruciating pain became fixed on the inside and forepart of her knee, accompanied with a feverish paroxysm.

I found that the primary cause in the digestive organs had been entirely overlooked, and that attention had been exclusively paid to the secondary disease, by cold applications of the solution of acetate of lead, together with topical bleeding with leeches.

Here, unfortunately, as well as in the former case, the cure was much protracted, from certain difficulties which occurred ; however, at last, the disease was subdued by the use of evacuations from the primæ viæ, anodynes, and, latterly, cinchona internally, with the continued use of leeching, repeated blisters, and anodyne poultices ; by which means the febrile state subsided, the swelling by degrees abated, and the pain left her, at least when in a lying posture, but continued to be considerable on attempting to stand, and at the end of four months she could barely walk with a crutch. She, however, recovered perfectly at last, a small degree of fullness on the joint only remaining.

I am, your's, &c.

LETTER XVI.

DEAR —

PREVIOUS to any farther remarks on the morbid sympathies attending rheumatic affections, I will just observe, that after the febrile and inflammatory state of acute rheumatism has subsided, the usual effects resulting from inflammation on membraneous parts are commonly left behind ; such as thickening of these membranes, adhesions, and their consequences, occasioning stiffness and impaired action of the joints, with frequent shooting pains, which are much influenced by changes in the state of the atmosphere. These remain long after recovery, and sometimes last during life, under the appellation of chronic rheumatism. But this state be-

ing merely a sequel of the former, and having become a fixed local disease, consisting of organic obstruction, I do not intend at present to take any farther notice of it ; because it is to remarks on the operation of the active morbid sympathies only that I am, at present, desirous of drawing your attention.

Of this nature is that form of rheumatism, which, appearing under a more diffused shape than the former, is not so much confined to the articulations, but, in a desultory manner, frequently occupies the large muscles, their surrounding membranes, or even a nervous chord exclusively. It is known by the appellations of atonic rheumatism, lumbago, sciatica, periodical rheumatism, *tic douloureux*, &c. from the various shapes under which it shows itself. Although the *primæ viæ*, in these cases, uniformly exhibit unequivocal signs of being in a loaded state, yet the vascular system is very commonly

not included in the sympathetic excitement ; at the same time, cases do now and then occur accompanied with a severe degree of gastric fever.

The character of atonic rheumatism consists in a painful affection of some muscular parts, or of their membranes. The pains are not so severe as in acute rheumatism ; they very frequently wander from one part of the body to another, although it often enough happens that the pain remains fixed in one part for a long time. It generally appears to occupy the membranes of the muscles ; but a particular muscle, or a portion of the fibres of a particular muscle, becomes frequently so affected by the sympathetic spasm, as to be impeded in its free action ; the pain being constantly aggravated by the slightest movement of the part, although quite easy when the muscle is at rest. When the seat of the pain is superficial, occupying such of the muscles

or membranes of such muscles, as are contiguous to the common integuments, these rheumatic pains are liable to be much aggravated by coldness of the atmosphere ; consequently this sort of complaint is most severe in the winter season. Although the above is the most usual form of this degree of rheumatism, yet cases occur in which it assumes a very formidable aspect ; in those cases, I mean, where the muscles of the thorax, especially the intercostals, happen to be severely included in the sympathetic affection, as I shall afterwards have occasion to point out.

The remote cause of these phenomena is decidedly seated in the digestive organs in this case, as well as in the former. They are in their nature spasmodic, only the seat of the morbid sympathy most commonly appears to be one less susceptible of that inflammation, which forms the secondary disease of acute rheumatism.

What the intrinsic nature of that irritating cause is which produces the changes of place, and shiftings of the pain from one part of the body to another, it appears impossible to explain; but the most probable supposition is, that they depend on the occasional change of place of the irritating matter contained in the intestines, to one, with which some other distant part of the body has a more direct sympathetic affinity than that which the pain has left.

But of a much more painful nature than the above, are the cases of lumbago, sciatica, tic douloureux, and periodical or intermitting rheumatism. They are with great certainty to be traced from the same remote cause, and, like the former, are only sometimes attended with gastric fever, but are uniformly associated with decided signs of a diseased state of the alimentary canal.

In those afflicted with lumbago, as

well as in sciatica, I have observed that the collections of offensive matter, productive of the complaint, have appeared to be more frequently seated in the lower intestines than in the stomach and duodenum ; but that, in all the regular periodical forms of the disease, the stomach itself, and its appendage, the duodenum, are chiefly in fault.

Although the spasmodic action of muscular fibres, attended with great pain, is often perceived to be the visible effect of morbid sympathy, yet it does not appear that the painful sensation of a sympathising organ, is always, or necessarily, attended by muscular spasm ; but that vehement sensations of sympathetic pain may be created in an individual nervous chord, or on a plexus of nerves, without the agency of muscular spasm having been excited in the sympathising part.

The pains which are excited by morbid sympathy, in cases of lumbago and scia-

tica, appear to be of this nature, and to be seated in one or more of the large nervous chords, stretching along their branches; and occasionally shooting along the limb like a stroke of electricity; being, at the same time, always aggravated by the action of the adjoining muscles. When cases of this sort are recent, a recovery from them is seldom long protracted; because, as soon as the remote cause is discharged from the intestines, the sympathetic effect depending upon it becomes also mitigated, or is removed altogether, after which, the healthy action of the limb is quickly restored. I will mention an instance of a case to this effect which lately occurred.—A man of 69 years, who had been sometimes subject to rheumatic pains in his shoulders and limbs, and occasionally to lumbago, after having been in a very costive state for some days, was, without any evident cause, seized in the evening with a slight

fit of lumbago. He passed a very restless night, with much pain, especially when turning in bed; on which occasions, or even on drawing up his limbs, he was affected with severe pain across the loins, which spread round the abdominal muscles of the left side, in form of a diffused painful spasm, which continued for the space of about half a minute, when it subsided, till a fresh motion of the same sort renewed the feeling. He was advised in the morning to take a laxative medicine, and a dose of the pil. gambag. gave a plentiful discharge from his bowels, containing a great quantity of lumpy fœces; he became easier in the course of the day, and continued well.

As the sheaths of the nerves are of a membranous texture, they, like other membranes, are susceptible of spasmodic affections, from morbid sympathy, and also, by a law of morbid sympathy, are susceptible of inflammation in con-

sequence of that spasm ; which state of inflammation necessarily communicates an increase of painful sensation to the inclosed nerve ; and, together with adhesions formed betwixt the inflamed sheaths, and the adjoining membranes of muscles, probably constitutes a cause of the chronic, aching pains, which pass along the course of the sciatic nerve ; and which are so much augmented whenever the muscles of the thigh are called into action. And farther, when it is considered, that, by the thickening of the inflamed membranes, and perhaps occasional effusions from them, the medullary part of the nerve itself may be compressed, it is no way surprising that paralytic weakness, and general decay of the whole limb, should follow.

The approach of this form of the disease is less obvious than that of acute rheumatism, as, from there seldom being any pyrexia, the attending uneasiness du-

ring the latent period is less remarkable. At the same time, the signs of intestinal disease are always thoroughly perceptible when they are enquired after ; but it frequently happens that the first sign of illness which the patient himself perceives, is a most violent fit of pain, shooting suddenly, like an electric shock, through his loins or his thigh ; sometimes the pain is limited to a confined space, at other times it runs down his leg, along the whole course of the sciatic and crural nerves.

In the periodical rheumatism, the painful morbid affection is confined to no particular department of the body. It occasionally lays hold of any organ, or any portion of the nervous system. It has some times regular remissions and exacerbations ; at other times it is completely intermitting : the paroxysm returning regularly at the same time every day, continues gradually increasing in

violence for some hours, till, having arrived at its greatest height, it as gradually declines, and entirely disappears till the revolution of its stated time. This is instanced in the periodical headache, under which, the pain often occupies one entire side of the head, while the other side remains quite free, the limits being marked by a defined line. On some occasions it is confined to a more circumscribed spot on some part of the head, face, or eye-brow, under the appellation of megrim; and, when seated on the coats of the eye itself, it never fails to give a visible instance of that inflammation, which so quickly follows in any tense membrane, that becomes the seat of spasm from the action of morbid sympathy.

But this disease, when in its most concentrated shape, has latterly received the name of *tic douloureux*, as a new disease, and generally seated in the face or head.

The pain occupies a spot not larger than the point of a finger will cover, and appears to be exclusively fixed on a portion of a nervous chord only, none of the surrounding parts being included, or at least not much so. As a method of cure for this complaint, it has been made of late the subject of a surgical operation, with an exhibition of much anatomical accuracy in dividing the nervous threads so affected, when the relief is equally immediate with that received from the destruction of the nerves of a carious tooth by extracting it.

I observe, however, that the operation has only sometimes proved finally successful ; and, from what I have observed in cases bearing a very near resemblance to the descriptions given, I have the strongest reason to believe it to be a case of morbid sympathy, and similar to the well known *clavis hystericus*.

Having already stated to you the phe-

nomena of acute rheumatism, as arising from the operation of the laws of morbid sympathy, you must have perceived that in atonic rheumatism, as acknowledging a similar remote cause with the former, the plan of cure must also proceed on the same principle, that of relieving the system, in the first instance, from that primary irritation by which these appearances are excited ; but this object can be accomplished in no other way than by clearing the alimentary canal from its contained acrimony. It is likewise obvious, that any local application, independent of this, can go no further than merely to palliate the effect of this cause, but without curing the disease, which will not happen while the power of the other remains in action.

In pursuing the *methodus medendi*, hereby pointed out, I have to observe to you, with respect to that moderate de-

gree of the disease, in which the pains are slight, and habitually shifting their place, attended with impaired appetite for food, flatulency, and unrefreshing sleep, exhibiting only slight signs of alvine derangement, a regular course of medicines is seldom either required or submitted to by the patient. It is on such occasions that the saline mineral waters are usually resorted to, and indeed successfully ; the laxative quality of the water being much assisted in its medicinal effects by the dilution which the offending contents of the intestines receive from the large quantities which are drunk. Therefore, a course of these waters is well calculated to fulfil the above object ; and is, in such cases, extremely useful, especially if it is accompanied with the sedative effects of the tepid bath, applied to the surface of the body, and with the use of flannel worn next the skin.

Although the other forms of atonic rheumatism are much more formidable in their nature, and frequently productive of more extreme pain than the foregoing, yet still they require the same general mode of treatment; and you will generally find, that, as soon as the signs of alvine derangement begin to disappear, the pains of lumbago, or sciatica, will be abated also; and this much being accomplished, if the relief proves not to be permanent, the cinchona, taken in a sufficient quantity, will not fail to render it so, especially when the complaint assumes a periodical form. With respect to local applications, the warm bath, from its sedative power, is useful from the beginning; and when the seat of the pain in lumbago and sciatica is attended by swelling, as it sometimes is, indicating inflammation, either on the membranes of the muscles, the nervous sheaths, or

perhaps the ligaments of some of the lumbar vertebræ, the addition of free topical bleedings, with occasional blisters, proves highly assistant. A large blister on the part will sometimes of itself remove the fit of pain ; but, in such cases, it is presumable, either that the complaint is idiopathic, or else, if it is otherwise, that the influence of the primary cause is not powerful. I never have observed much benefit from the rubefacientia ; but a few selected instances will best demonstrate to you the practice founded upon the foregoing pathology.

1789. *August 14th.* A gentleman, æt. 60, complains of constant pain in the joint of his knee, which frequently shoots along his leg down to his ankle, spreading through the gastrocnemii muscles ; it comes upon him at irregular intervals, with increased violence, continuing so for two hours or longer at a time, and is

most severe during the night—there is no swelling. He has remained in this state for many weeks, and has used, by advice, some laxative doses, and occasionally, at bed-time, ten grains of Pul. Doveri, which generally gave some relief. At present, his appetite for food is impaired ; his mouth and throat parched, with a thick crust on his tongue ; is habitually restless, and hot in the night time.—Cap. Emetic. ex Antimon. Tartar. Item R̄ Pilul. Aloet. cum Calomel. No. xxiv. Two of these to be taken every morning, or such a number as will procure two motions from his bowels daily. Directed to apply warm fomentations to the whole length of his leg every night at bed-time, covering it with warm flannel afterward.

Aug. 22d. He vomited a great quantity of very acrid fluid, with the emetic ; and has had two discharges at least from

his bowels every day from the pills, which were very offensive. His tongue is cleaner, and other signs of a loaded state of the præcordia gone off; the pain of his leg is now much mitigated.—Continue Pil. Laxat.

Aug. 30th. The complaint has entirely left him.—℞ Pulv. Cinchon. ʒss. Pulv. Zingiber gr. v. m. to be taken four times a-day.

1806. *May 17th.* A lady, æt. 60, has violent pain across her loins, stretching to the lateral parts of the abdomen, and giving a degree of spasm to a portion of the muscles on one side betwixt the ilium and false ribs. She has been complaining for ten days—Has no heat or fever, but signs of great alvine derangement, such as weight and distension at the præcor-

dia, very furred tongue, and parched mouth, with much general languor. She rejects the use of an emetic, which otherwise would be proper.—℞ Calomel gr. viij. Pulv. Jalap gr. xx. ft. Bolus.—Cap. Pulv. Dover. gr. xx. at bed-time.

May 19th. Much the same—℞ Bolus Laxativ. u. a. to be taken in the morning.—℞ Bals. Anodyn. to be rubbed on her loins.

May 21st. The laxative bolus operated powerfully, and brought off many bilious discharges. She is much relieved from pain, and the muscular spasm gone off—the furring on her tongue begins to lessen.

May 24th. She remained better till yesterday, when the pain across her loins returned, passing down her limbs in course of the sciatic nerve.—℞ Calomel gr. viij. P. Jalap. gr. xx. m. u. a.

May 25th. The laxative doses brought off a great quantity of offensive fœces—she is much better.

May 28th. Continues well.

I select the two following cases, as instances of very early relief. One of these you saw, and will probably recollect.

1805. *Sept. 3d.* A servant girl, æt. 25, has violent pain in one of her limbs, from her hip joint to the ankle, attended with great inability of muscular action; this is also the case with her other limb, as well as both her arms, but without any pain in them. She has headache, with some degree of stupor, weight at the præcordia, tongue very much furred and parched, with every sign of offensive matter in the digestive organs—is of a plethoric habit of body.—Pulse 80, and a little full. About ten days ago she contracted a common cold by wearing very thin clothes while at her work in cold weather; since which time the above complaints have gradually gained upon her.

Directed to lose twelve ounces of blood from her arm ; and at the end of three hours to take the following laxative dose :
 —℞ Calomel gr. vi. P. Jalap. gr. xv. m. ft. Bolus.

Sept. 4th. Passed some very offensive foeculent matter from her bowels yesterday—the pain of her limb the same.—Pulse natural—Stupor lessened.—Cap. Emetic. ex Ant. Tartarin.

Sept. 5th. Vomited a great quantity of bile. The pain is easier, and she is in every way relieved ; her mouth less parched, and her tongue cleaning.—℞ Cathart. u. a.

Sept. 7th. She again voided very offensive matter from her bowels, and is much better ; the pain and muscular inability greatly relieved, and she begins to take food.—Repet. Emet. et Cathartic u. a.

Sept. 9th. Is quite free from pain, the

signs of loaded primæ viæ gone off; she is relishing her food, and is able to walk about.

Sept. 10th. Continues better.—℞ Li-mat. Ferri. ʒ vi. Pulv. Cinchon. ʒ ss. Pulv. Zingiber ʒ i. m. ft. Elect.—a small teaspoon-full thrice a-day.

In reflecting on the prominent symptoms attending this case, some ambiguity arose from the circumstance of the ordinary signs of a loaded state of the primæ viæ, being attended with stupor and muscular inability, in a full habit of body. It therefore became necessary, in forming a plan of procedure, as I remarked to you at the time, to keep in view the possibility of some primary organic affection of the brain itself, from which source every possible derangement of any function of the human body may, and certainly does, occasionally arise. But the sensorium commune may also be affect-

ed by morbid sympathy, merely in such a way as to interrupt its healthy action ; in so much, as thereby to exhibit the varied phenomena, which are naturally derived from real organic obstruction ; and from the re-action of which on the machine, life itself is not unfrequently extinguished ; but, amongst other effects of sympathetic influence on the brain, which not unfrequently occur, universal stupor is one ;—a very particular instance of this, which has recently occurred, I will afterwards mention to you.

As the girl was of a full habit of body, it therefore became safe to abstract some part of the general mass of fluids, and to mark, from the effects, in how far any compression appeared thereby to be removed from the brain ; no change of that sort, however, appeared. A dose of mercurial laxative, given three hours after, produced some very offensive stools ; and

next morning the stupor was relieved, all other things remaining in the same state. An antimonial emetic brought off a great quantity of acrid bile ; and in the evening the pain of her limb was much easier. A repetition of the cathartic, next morning, again brought off much foetid matter from her bowels, she felt every way better, began to walk about, and could take food. A repetition of the emetic and cathartic, by clearing the primæ viæ, in two days more removed all her complaints.

1308. *July 15th.* A maid servant, æt. 29, has for two days past been violently affected with pain in her hip joint, passing down her limb, in the course of the sciatic nerve, to her foot ; it is constant, but greatly aggravated on attempt-

ing to use her leg, or to move it in any manner ; there is no swelling. She has much stomach derangement, as appears from weight at the præcordia, want of appetite, furred tongue, thirst, and transient rigors—Thinks her complaints were occasioned by wet feet, and exposure to cold, about ten days ago. In place of an emetic, which she rejects, \mathcal{R} Calomel, gr. v. Ant. Tart. $\frac{1}{3}$ gr. m. ft. Bolus, to be taken immediately.

July 16th. Vomited much bilious matter, and voided many offensive stools. The pain is so much relieved since yesterday as to admit of her walking a little ; her stomach, however, is still much weighted, and her tongue furred.—Repet. Bolus u. a.

July 18th. She again discharged a great quantity of bilious matter, both ways, yesterday ; the pain is gone off, and she is taking food, being quite recovered.

This is a case in which there remains no doubt with respect to its nature. The latent period, *i. e.* from the time when the accident of obstructed perspiration, &c. from cold occurred, till the attack of sciatica, was eight days ; during which space her stomach and bowels had shown signs of something offensive being collected in them, demonstrated by the usual attending appearances ; which irritating contents, increasing in acrimony by retention, a painful morbid sympathy became established betwixt the digestive organs and the great sciatic nerve. The seat of this sympathetic pain appears to have been placed on the nerve itself, or perhaps also on its membranous sheath, and in its nature not inflammatory, because the pain vanished immediately upon the primary irritation being removed from the *primæ viæ* ; but, had the sympathetic influence been permitted to remain

on the nerve, or its sheath, membranaceous inflammation on the parts, from the action of that sympathy, it is presumable, would, as usual, have been formed, and consequently have created a tedious disease.

I am your's, &c.

LETTER XVI.

DEAR —

WHEN atonic rheumatism appears in a periodical form, it is observed, most commonly, to occupy some part of the head ; but this is by no means exclusively the case, as many instances occur where other parts of the body are affected in a similar manner. The following is one where it was seated in the fore arm.

1791. *March 13th.* Miss — is affected with violent pain in her left arm, stretching from her elbow to her wrist, being limited to that space. It is periodical, and lasts about five hours at a time ; while during the intervals she remains in perfect ease. It has continued thus, daily, for a week, with increasing vio-

lence. She has general languor, want of appetite, a furred and parched mouth, with thirst—her pulse natural.

An antimonial emetic threw off a great quantity of bilious-coloured fluid, and a laxative dose, taken next morning, carried off several very offensive discharges also ; the degree of pain remaining much the same. On the 16th the emetic was repeated, and again brought up a great quantity of bilious matter from her stomach. On the 17th the fit of pain was less severe, and she began to take cinchona, in the quantity of forty grains every two hours. In the space of three days the fit of pain was become very much mitigated, and in three days more it was entirely gone off.

1801. *October 22.* A woman, æt. 22, after having been affected for a week with catarrh and stomach complaints, was seized with violent pain, without any swelling on the side of her neck.

It was periodical ; coming on at seven o'clock in the evening, and continued till midnight. She was treated in the same manner as the foregoing case, and recovered entirely in six days.

But the disease is not always so quickly checked ; as, for instance, in the following, which I will just mention on account of its obstinacy, and the length of time which it lasted.

1802. A gentleman, æt. 25, was taken with periodical headache in form of hemicrania. The fit of pain continued above six hours every day, for the space of six weeks ; and during four of these hours with great violence, in spite of every exertion for his relief. He took many emetics, as well as laxatives, and threw up from his stomach a great quantity of the most acrid, corrosive fluid I ever saw come from any person. It is to the extraordinary irritation arising from this circumstance, that I presume the long duration

of his disease is chiefly to be ascribed ; as also connected with it, the morbid sensibility of his stomach, which would rarely receive so much as an ounce of cinchona in a day. However, this medicine was persevered in, accompanied with occasional opiates ; and towards the latter end, when the periodical pain had nearly gone off, he took a chalybeate in addition to the cinchona—Has had no return.

But perhaps the most distressing form of this disease is when the sympathetic pain is seated on the globe of the eye itself ; in which case it seldom, perhaps never, fails to produce the secondary disease of inflammation upon its membranes. I have seen inflammation formed on the albuginea regularly with every return of the fit, and subsiding with the spasmodic pain during the intermission, till the next fit commenced ; but most frequently the inflammation is permanent, even

during the intervals of pain, its violence, as well as obstinacy, being often very great. It is to be relieved, with certainty, solely on the same general principles as in the foregoing cases ; by clearing off the primary cause from the stomach and intestines. But, to accomplish this on such occasions, you have to trust to the slower effects of laxatives only ; as, from the increased quantity of blood always thrown into the head by the act of vomiting, there arises an evident danger of aggravating the ophthalmia ; following up this with the tonic and sedative powers of cinchona and opiates ; and on the present occasion with topical bleeding, especially by scarifying the membranes. A little laudanum, occasionally dropt into the eye, is also useful.

The singular case of stupor from morbid sympathy, which I alluded to in a former case, happened in a healthy young woman of twenty years of age. She was

suddenly seized, when in church, with something like syncope; that is, she became insensible, and fell from her seat. She was conveyed home, supported by two women, but walked very feebly. I saw her in about an hour afterwards; she was insensible to every thing—could not speak—neither could she move her arms or limbs in any manner, but suffered them to remain in any posture in which her attendants placed them; they were cold, and she shewed no signs of consciousness, farther than that she swallowed any liquid which was presented to her, or rather which was poured into her mouth; and was even insensible to the stimulus of Aq. Ammonia put up her nose; her pulse natural, and menses regular. As she could swallow liquids, she was directed to take frequently of a mixture containing Aq. Ammon., and Tenit. Fœtid. diluted with water. After four hours I found her much in the same state. Up-

on closer enquiry, I found good reason to believe that her stomach had been in a disordered state for some days previous to this sudden attack.—℞ Calomel. gr. vi. Antim. Tartar gr. ss. m. to be taken immediately. This dose operated freely both ways ; she vomited thrice, a great quantity of bilious-coloured fluid, and had a plentiful evacuation from her bowels. On the next day the stupor was gone off ; she was out of bed, and walking about. In this case the seat of the morbid sympathetic affection appears, decidedly, to have been on the organ of the brain itself ; I believe that it occurs not unfrequently, and during its continuance the influence of that organ over the system appears to be as much impeded as when it suffers from direct compression. This, I am persuaded, is the nature of that stupor which we see take place, for a time, in fevers ; and is the cause of that state of insensibility so fre-

quently mistaken for hydrocephalus in children.

With regard to the disease designated *tic dolooureux*, I cannot avoid considering it as a case of atonic rheumatism, and have advised for it accordingly, as in the few following cases.

In spring 1785, a gentleman, aged 40, a healthy man, but addicted to his bottle, was seized with a severe unbearable pain, which was confined to a spot on the flat surface of the tibia, about the middle of both his legs. It came on gradually, but in a short time became so severe as to make him cry out with violence. It had been upon him about two hours when I first saw him. The pain was not aggravated by pressure ; there was no swelling, nor any thing visibly wrong, on the parts pained, either of which I could cover with the point of my finger ; his skin cool, and pulse natural. There was, however, strong signs of a loaded stomach ;

such as parched and furred tongue, impaired appetite, with weight and distention of the precordia.

He immediately took an emetic, which brought off a great quantity of tough and sharp-tasted fluid, offensive to the smell, and in the space of a quarter of an hour, the pain of his legs ceased. He continued well next day, took a laxative dose, and I have never heard of any return of the complaint.

1801. *April 8th.* A lady, of a gouty constitution, has a most violent pain on the back part of her left shoulder ; it is confined to a small spot over the scapula ; is constant, and has been very severe through the last night. It is greatly aggravated by fetching a deep breath, shooting at these times around her side towards her left breast. She has headache, thirst, furred tongue, and offensive breath ; has had some degree of diarrhoea during the night, her skin warm, and pulse a

little moved.—Morning. The pain is at present very great, being almost unbearable.—Appl. Visceat. ad Partem.—℞ Calomel, gr. v. ant. Tart. $\frac{1}{4}$ gr. m. Statim sumend.—Evening. Has vomited a great quantity, first of an acid fluid, and then much bilious matter. The pain is now much easier, her skin cool, and every way relieved.

April 9th. Continues to be less pained.—Repet. Calomel & Ant. Tart. u. a.

April 10th. Did not vomit, but voided many bilious stools. Continues easier.

April 11th. Although the pain of her shoulder continues easier, yet there is still some distension at the præcordia, with headache, thirst, and languor.—Cap. Calomel, gr. v. H. S. et Crasmane, Cap. $\frac{3}{4}$ i. mistur. sequent.—℞ Tart. Potass $\frac{3}{4}$ vi. Pulv. Jalap. $\frac{3}{4}$ ss. Aq. Calid. $\frac{3}{4}$ vi. Sachar. q. s. m.

April 12th. Voided much offensive matter from her bowels.

April 14th. The pain of her shoulder continues better ; but she still has some distension of her stomach, with a little feverish heat.—℞ Pulv. Ipeca. gr. vi. Antim. Tartar $\frac{1}{2}$ gr. m. to be taken in the evening, and a laxative dose in the morning.

April 15th. Evening. The medicines operated freely both ways—Is greatly relieved in every respect.—℞ Mistur. laxat. u. a.—two table-spoonfulls to be taken every morning.

April 21st. By the daily use of the laxative mixture, she has continued to pass great quantities of bilious-coloured fœces. Her tongue is now clean, the distension is gone off, and she is relishing her food, the pain having entirely left her.—℞ Infus. Amar.—a table-spoonfull twice a-day.

May 2d. Continues well.

This patient's great aversion to the operation of an emetic, which was the

reason why it was not earlier called into use, is, I believe, the chief cause of the case having proved more tedious than it otherwise would have been, if her stomach had been freely cleared at the beginning.

1808. *March 25th.* A man, of rheumatic idiosyncrasy, and who was the subject of a case of acute rheumatism, mentioned in a former letter, without having been conscious of any previous complaint, was seized with a violent fit of pain on his left temple, occupying a small spot on the zygomatic process. It is periodical, coming on about eight o'clock in the evening, and continues nearly twelve hours, when it totally subsides. It has affected him for a week, and is increasing in violence. He has of himself taken an

emetic of Ipecacuana, which operated without relief, bringing off some phlegm and indigested meat ; he has also taken an opening dose of Sal. Glauber.—℞ Emet. ex Antim. Tartar. Statim sumend.—℞ Haust. Anodyn.

March 26th. The emetic operated powerfully, bringing off a great quantity of bile ; it also produced several large bilious stools. The paroxysm of pain last night was very moderate.

March 27th. Had no return of pain last night.—℞ Calomel, gr. v. P. Jalap. gr xx.—to be taken in the morning.

March 30. Continues quite well.

The next case is one of a complex nature, and, as exhibiting a remarkable climax of succeeding morbid sympathies, might, perhaps, be more properly inclu-

ded in another place ; but as the disease towards its termination approached to *tic dolooureux*, I am induced on that account to insert it here.

1808. *March 20th.* A lady, *æt.* 30, of gouty parentage, and subject to stomach complaints, after having been unwell for the space of a week, with signs of a disordered stomach, such as want of appetite, parched mouth, furred tongue, bad taste in her mouth, and general languor, with vicissitudes of heat and chillness, was suddenly seized with violent pains in both thighs, along the course of the sciatic nerves, from the head of the femur to the ancle. This continued with more or less violence, rendering her unable to walk, but with the utmost pain, during the space of twenty-four hours, when it suddenly went off without any evident cause for so doing, she having taken no medicine. In a few minutes after which she was attacked with pain,

which was soon succeeded by inflammation, on the membranes of the fauces, accompanied with pyrexia. The inflammation of her throat ended in a large supuration, which, at the end of ten or twelve days, burst, the contents passing into her stomach. In the space of a few hours after which, she was taken with a very severe periodical headache, which occupied her eye-brows, temples, and forehead, and remained with her nearly two weeks longer. From a strong antipathy to the use of medicines, she had used none through the whole course of her illness till now, when she was persuaded to take repeated doses of a saline purge, which, by clearing her bowels, carried off the headache, without any other application.

April 20th. Is free from any signs of disordered stomach, and continues well. She continued free from complaint till May 8th, when, having travelled a few

miles over a rough road in a gig, by which she was much shaken, she was early in the afternoon affected with uneasy pains in both her knees, shooting along the outside of her thighs up to the hip-joint. These gradually increased in violence ; and in the evening, in addition to this, she was attacked by a severe pain, in a circumscribed small spot on the sternum, in form of the *clavis hystericus*, accompanied with a small degree of nausea. Towards bed-time, the pains of her limbs, and of the sternum, became still more severe, and she was persuaded by those about her to take half a glass of brandy, with the hope of relieving the pain of her breast. Soon after which the nausea increased, and she vomited up a great quantity of glutinous phlegm, and other very offensive contents of her stomach. The painful spot on the sternum was immediately lessened in severity ; as well as the pains in her limbs, in a short

time after. She slept well through the night, and next morning the pain on the sternum was entirely gone. In course of the day, the pains of her limbs became gradually better; and before night these had also entirely left her.

On a pathological review of the phenomena attending this case, we find exhibited a chain of primary and secondary morbid sympathies, occupying distant parts of the body in regular succession. A latent period had subsisted for a week or more, exhibiting merely some stomach derangement, with a small degree of gastric fever. From increasing acrimony in the primary offending cause, or perhaps from a partial change of its place, it happened that, in addition to this vascular excitement, a sympathetic painful affection became fixed on both limbs along the course of the sciatic nerve; the degree of pain alternated, coming on with increased violence at intervals; there

was no swelling, nor increase of pain on pressure, but it was greatly increased by every attempt to call the muscles of her limbs into action ; which affection seemed not as yet to have become inflammatory, but to be merely spasmodic, as appears from its sudden departure.

I formerly observed to you, that the seemingly unaccountable cause of the shifting pains on the surface of the body appeared to depend on a casual change of place of the irritating contents of the *primæ viæ*, whereby these contents were applied to a portion of the gastric or alvine nerves, with which some other organ had a greater sympathetic affinity than that which they had left. If this view is correct, it will then here be understood, that it was in consequence of the operation of this law that the seat of the painful spasm was changed from the thighs, and transferred to the membrane of the fauces. But, by a pathological

axiom formerly mentioned, when a membrane of a firm texture becomes the seat of sympathetic spasm, that membrane is liable to become quickly inflamed, and of course forms one of the general causes of fever. Accordingly, in the above case, upon the sympathetic spasm being transferred to the membranes of the throat, they quickly become inflamed, accompanied with an increase of that febrile state which had previously existed ; which inflammation having extended to the adjoining cellular substance, a suppuration took place. This being completed, the tumour burst, and its contents were discharged into the stomach ; but, from the primary cause having been still retained there, together with the accession of irritation, by the addition of a quantity of purulent matter from her throat, another painful sympathy soon took place, seated on her temples and forehead, in form of periodical headache, to a violent degree.

But a few cathartic doses, which she was now persuaded to use, having discharged a great quantity of very corrupted fœces, the remote cause of the whole appeared to be thereby removed, the periodical headache was by degrees removed also, and her appetite for food was restored. Had the same discharge been procured at the early, or latent period of the disease, the whole succeeding distress would most probably have been prevented.

But, in farther prosecuting the progress of this extraordinary case, you will observe, that Mrs — continued well, at least without complaining, till May 8th, being eighteen days from the last report; when, apparently from the occasional cause of her body having been much shaken by the rough motion of a gig, and in consequence of some offending matter having been either retained, or again collected in the digestive organs, a fresh chain of morbid sympathies

was called into action, and amongst these a fit of *tic douloureux* ; a severely pained spot on the sternum, from a morbid sympathy with the stomach, as is demonstrated by her having involuntarily vomited a quantity of very offensive fluid ; upon which the pain was immediately relieved, and in a few hours after, all the other sympathetic pains disappeared ; the primary remote cause of their existence having been removed from the digestive organs.

Another instance of a fit of rheumatic pain being immediately removed by a natural discharge, is the case of Mr —, a man of 40 years of age. In October 1790, he had the misfortune of a broken leg, when, after six weeks confinement, it happened, without any apparent cause, that his skin became hot, with a little frequency in his pulse ; he was restless, and had sharp pains shooting through the ankle-joint of his lame

leg, with a little local heat and swelling. This continued for three days ; his stomach at last became sick, and he vomited a little. This was followed by four or five discharges from his bowels, upon which the pains of his leg and ankle immediately disappeared.

I am your's, &c.

LETTER XVII.

DEAR —

THERE still remains to be noticed to you another form of anomalous rheumatism, chiefly influencing the large muscles of the trunk of the body, which I am desirous of pressing on your attention ; because it has occasionally been attended with important consequences, from the connection which it sometimes has with pneumonia. In its most inoffensive form it is unattended with fever, yet the pains are often severe, occupying the large muscles both of the thorax and abdomen, but chiefly those of the thorax ; they are apt to shift their place, and vary in degree of violence, obstructing the free action of the muscles in certain

motions of the body, and occasionally giving a check to respiration, but unattended by cough or dyspnœa ; accompanying which symptoms, there are always to be remarked unequivocal signs of irritating matter being at the same time contained in the digestive organs. At other times, there is gastric fever from the beginning ; and what renders the diagnosis of such cases of peculiar importance is, when the pain is fixed on the deeper seated muscles of the thorax, especially on the intercostals, so as to check their action, while at the same time the vascular system is excited to a febrile state, it very much resembles true pneumonia ; and, in fact, if the membrane of the contiguous pleura is at all included in the sympathetic spasm, inflammation upon it, with pneumonia, is almost a certain consequence.

Primary inflammation, from direct stimulus applied to the part, necessarily

takes place on the lungs, equally with any other organ of the body ; but what I allude to, is inflammation formed on some part of the tense membrane of the pleura by a morbid sympathetic action, excited by a remote cause seated in the digestive organs ; which inflammation, when thus formed, constitutes a supervening and secondary disease. Of pneumonia being excited in this manner, I am most truly persuaded, and that on such occasions it is most commonly ushered in by the above appearances.

So long as the absence of cough and dyspnœa shews that the lungs are not organically included ; and that the disease consists alone of gastric fever, accompanied with a spasmodic affection among the muscles of the thorax, it very readily yields to the ordinary treatment applicable to such other forms of rheumatic disease as flow from morbid sympathy. Emetics, in particular, are eminently

useful ; neither do the muscular pains suffer any kind of aggravation from the act of vomiting. But when, by an extension of the sympathetic spasm to the membraneous pleura, a state of inflammation, attended with cough and dyspnoea, has become established, those remedies usually applied to pneumonia are powerfully called for, as much so as when that inflammation is caused by a direct stimulus ; but of this you may be assured, that, however extensively the antiphlogistic plan may have been pursued by large general bleedings, &c. its effects will be very limited indeed, while the primary remote cause in the primæ viæ is left to remain in full action ; because, like a thorn in the flesh, it will assuredly tend to keep up the inflammation, and to counteract the otherwise efficient means of relief. For which reason, as in an actually inflamed state of the lungs, the operation of vomiting is certainly inap-

plicable ; a plentiful discharge from the bowels must be the more perseveringly procured, not merely by the use of lenient purgatives, but by mercurial and antimonial cathartics, the efficacy of which is so greatly superior, in all such cases, to any other kind of laxative medicine. They should be always accompanied with plentiful dilution. It is unnecessary to remind you of the absolute necessity, in such cases, of discharging the primæ viæ of their offensive contents at the earliest period possible of the disease ; for, whenever so delicate an organ as the lungs has become affected, delay is attended with the greatest hazard.

The above statement will be best illustrated by a few cases—some of them attended with fever, and others not.

1806. *April 4th.* A woman, aged 50, complains of a constant pain of her breast, seated upon the false ribs below the left arm, and stretching upon her side. It

checks her breathing on making a deep respiration, and is increased on any motion of her body which brings the muscles of the thorax into action; has no cough, but complains of headache, want of appetite, rigors, with a furred tongue; skin cool—pulse 90; has been complaining in this way for some weeks.— \mathcal{R} Emet. ex Ant. Tart.— \mathcal{R} Haust. Anodyn. H. S.

April 5th. Vomited some sharp-tasted fluid, mixed with bile; the pain and other symptoms mitigated.— \mathcal{R} Tart. Potass. \mathfrak{z} iij. Pulv. Jalap. gr. xv. aq. Calid. \mathfrak{z} iv. m. to be taken to-morrow morning.

April 8th. Continues better; the pain, &c. gone off.—Repetit. Cathar. u. a.

April 10th. Quite well.

Dec. 4th. A lady, aged 25, complains of an acute pain in her left side; it is greatly increased on certain motions of

her body, especially on turning in bed, and on fetching a deep respiration;—complains of headache, thirst, want of appetite; her tongue is furred, and her bowels tardy; pulse natural. She has taken an opening dose, and applied a blister to the part, without effect.—℞ Emet. ex Ant. Tartar.—℞ Haust. Anodyn.

Dec. 5th. The emetic operated well, without aggravating the pain of her side in time of retching; threw off a great quantity of bile; the pain to-day is almost gone.

Dec. 6th. Continues better.—Repetit. Cathart.

Dec. 7th. Is quite well.

1805. *June 15th.* Mrs ———, a married lady, æt. 30, in child-bed, three weeks after delivery. She recovered well for two weeks, at the end of which she had

a feverish paroxysm from cold, and an error in diet. Lochia natural. She is affected with violent pain upon the ribs of the right side of her breast, about three inches below the clavicle, which is increased by full respiration ; no cough. Pulse 120 ; some heat on her skin, her bowels bound, and is restless at night ; her tongue furred, with a bad taste in her mouth, want of appetite, and some thirst. She is averse to an emetic, from the fear of its increasing the pain of her breast.—℞ Tart. Potass ʒ iij. Mann. ʒ ss. aq. Calid. ʒ iij. m. to be taken in the morning.—℞ Haust. Anodyn. to be taken at bed-time.—As her stomach is flatulent, let her take a cup-full of Camomile Tea, with some drops of Elixir. Vit. occasionally.

June 17th. The laxative operated moderately ; her complaints much the same. Repetit. Cathart. u. a.

June 19th. Somewhat easier, and agrees to use a Camomile vomit.

June 21st. Vomited some sharp glutinous phlegm, and feels relieved. Upon observing that the pain of her breast was not aggravated by retching, she is now willing to use an Emetic.—℞ Emetic, ex Tart. Antim.—℞ Haust. Anodyn.

June 25th. The Emetic discharged much sharp fluid, mixed with bile. She is much better.—Pulse 90; the pain of her breast gone off; her mouth is cleaner, and she is taking some food.—Repet. Cathart. u. a.

June 27th. Recovered.

In the above instances, you will observe that the two first were unattended by a febrile state; in the last, the vascular system was also included, in form of simple gastric fever, the pain of the breast not being derived from organic obstruc-

tion, nor acting, as in that case it must have done, as an accessory cause of fever. This is demonstrated from its disappearing along with the gastric fever, in the same manner as in the preceding cases, upon the stomach being unloaded. The two following are cases of a more ambiguous nature, and of a complexion which requires a very cautious procedure.

1805. *May 5th.* A gentleman, æt. 40, of a plethoric habit of body, and florid complexion, complains of a fixed deep seated pain on the right side of his breast, which checks a full inspiration, and is increased by certain motions of his body, especially by raising or turning himself in bed. It frequently is felt as if there was a circumscribed ball under his ribs; has no cough, nor dyspnœa; his pulse 120, and full; with heat, thirst, furred tongue, and bad taste in his mouth. He thinks that his illness is the effect of obstructed perspiration from cold, after ha-

ving been greatly heated by exercise ; has been under these complaints for a week, and has been treated as being under pneumonia, with the usual antiphlogistic directions ; including bleedings, diaphoretics, and aperient medicines.—Repetit. Ven. Sectio. ad $\frac{3}{4}$ xiv.—Cont. Mixt. Diaphor.

May 6th. He has perspired, and feels rather easier ; the blood has a buff-coat upon its surface ; his pulse 110, and softer, but at times interrupted.—℞ Tart. Potass. $\frac{3}{4}$ iij., Vin. Antimon. $\frac{3}{4}$ ij., Pulv. Jalap, gr. x., aq. Calid. $\frac{3}{4}$ iij. m. ft. Haust. Cathartic.

May 7th. The opening draught operated powerfully—the discharges very offensive ; the pain of his breast, and other things, upon the whole, rather easier.—Pulse 110.

May 8th. Has been very restless all this day—has a slight cough, with the addition of shifting pains in the thorax.

—℞ Emetic ex Antim. Tartar. Statim sumend.—℞ Haust. Anodyn.

May 9th. Vomited a great quantity of bilious fluid, and, in general, his complaints are much relieved; the pain of his breast, in particular, is easier.—Pulse 110.—℞ Haust. Anodyn. u. a.

May 10th. Continues much as yesterday—Pulse still 110, with some heat; the shifting pains remain.—℞ Emetic, u. a.—℞ Haust. Anodyn. u. a.

May 11th. He again threw off much bile with the emetic; is to-day very much better.—Pulse 80.—Repetit. Cathartic. u. a.

May 14th. Free from complaint.

Cases of this nature, when the symptoms run high, are often obscure, and their treatment consequently becomes difficult. The last case, in particular, I must own, perplexed me much, in determining whether a local inflammation

was already formed or not ; the absence of cough and dyspnœa, however, together with a painful action of the muscles, shewed that the seat of the fixed pain was placed among them, and not as yet on the membrane of the lungs. I therefore proceeded on that principle ; but I have no doubt, that had the morbid sympathy remained much longer in action, the sympathetic spasm might very probably have extended to the pleura in reality, and pneumonia have proved the consequence ; after which, from the disease having assumed a different shape, the obvious impropriety of forcing the mass of blood through the substance of the already obstructed lungs, with that unusual velocity which happens in the act of vomiting, is self-evident ; and necessarily deprives the sick person of that benefit which is otherwise to be derived from the use of emetics ; and it remains only, in such a case, to endeavour at ac-

completing the purpose of unloading the canal, by the help of the most active cathartics ; the success of which, when exclusively depended on for this purpose, is both slower, as well as less certain, in the result.

1810. *May 30th.* A labouring man, aged 60, of a rheumatic constitution, after having been much exposed to cold easterly winds, especially in the night time, was attacked yesterday with a feverish paroxysm, attended with pain in his right side, slight cough, headache, thirst, general heat, and sense of weight at the præcordia, with furred tongue.—Pulse 110, and soft.—℞ Emetic, ex Tart. Antimon.—℞ Haust. Anodyn.

May 31st. Vomited a great quantity of bilious fluid, and purged once ; he rested well in the night, the pain being

much mitigated.—Pulse 90.—℞ Calomel. gr. v. Tart. Ant. $\frac{1}{2}$ gr. Pulv. Jalap. gr. x. m. ft. Bolus.

June 1st. The laxative bolus operated plentifully; the discharges very offensive.

June 2d. He is quite cool, his tongue clean, and is relishing his food; the pain of his side is entirely gone off.—Pulse natural.

June 3d. Continues well.

This is an instance of a febrile case, attended with ambiguous symptoms; it is one of many which have prevailed in this district for some months past, and which have very frequently terminated in pneumonia. The subjects of the disease are generally of the labouring class of people, and its pathology I believe to be this.—The primæ viæ become loaded in consequence of natural perspiration having been obstructed by much exposure to the chilling east winds, which have

constantly prevailed through the whole spring season ; by a morbid sympathy of the vascular system, with the irritation so produced in the digestive organs, gastric fever is established, attended by a spasmodic pain in some part of the thoracic muscles. The irritating cause being suffered to remain in action, its influence becomes extended to some part of the membranes within the thorax ; of course, inflammation of that membrane quickly follows, and pneumonia is formed. The subjects of this fever were men past the meridian of life, of an asthenic habit, and women of a lax fibre ; of course, the local inflammation was prone to pass into gangrene, and they died after a short illness. The great object in this case is to remove the primary cause of fever, contained in the digestive organs, with all possible diligence. When this is accomplished at the beginning, it is generally successful ; and, at all times,

its accomplishment paves the way to recovery.

The above cases are instances of a successful early attention to a very dangerous approach of pneumonia; though it may plausibly enough be alleged, that pneumonia, perhaps, might not have supervened on the first stage of illness. To this supposition, I can only offer you my conviction of its having often happened so; and that, at the period above alluded to, when pneumonia was a good deal epidemic, those whom I had occasion to see treated on the above principle, generally recovered, which was not the case with those treated by common practice; and I have witnessed some distressing instances of failure, which I ascribed to a dependence on severe venæsection, as the paramount medium of recovery, to the neglect of that vigorous attention to the loaded state of the digestive organs, as containing a morbid

cause; which these organs, when so circumstanced, always require.

With respect to pneumonic inflammation in general, although it may often enough be the effect of a direct idiopathic cause, yet I presume, that, in reality, it very frequently presents itself in the form of a secondary disease; and what favours this idea is, that if local inflammation, already formed, is always the primary cause of pneumonic fever, pain in the thorax, &c., how does it happen, that in many instances the pain does not commence for the space of several hours, or even more than a day, after the febrile state has been established; while, at the same time, the signs of a loaded state of the *primæ viæ* have prevailed from the beginning, frequently for days previous to the feverish paroxysm? This circumstance, I think, is best explained by the action of a morbid sympathy.—That the original pyrexia, in this case, is gastric;

and that the acrimony contained in the digestive organs, by increasing in virulence, produces, in addition to the vascular excitement, a morbid sympathetic spasm on the membrane of the lungs, and consequent inflammation, as a supervening disease ; which circumstance being admitted, a more vigorous exertion, in clearing away the offending alvine contents, is more urgently required than ordinary practice has demanded.

The Edinburgh Medical Commentaries, vol. ix., contain a letter from Dr Hamilton, a physician of eminence in Lynn Regis, to Dr Duncan, respecting the practical and highly successful use of Calomel combined with Opium, and occasionally with the addition of Tart. Antimon. in the treatment of inflammatory diseases, especially in pneumonia and acute rheumatism. The benefit derived from this practice, I think, admits of a most rational explanation from the pa-

thological idea, that local inflammation, in membranous parts, is occasionally the effect of sympathetic affinity, with irritation, seated in the digestive organs; and for accomplishing the discharge of which cause from the intestines, Calomel, especially when combined with Tart. Antim. is so eminently useful, while, at the same time, the sedative powers of Opium serve so well to lessen that nervous irritability on which sympathetic action depends, and consequently to lessen the activity of this exciting cause of topical inflammation. This view, then, of Dr Hamilton's practice, serves powerfully to strengthen, and to demonstrate the truth of the foregoing ætiology.

I am, your's, &c.

LETTER XVIII.

DEAR ———

THERE is no form of disease, concerning the nature of which so much speculative theory has been exercised, as is to be seen exhibited respecting the phenomena of gout ; which, from the obvious similitude of its morbid sympathies to those of rheumatism, I propose making the subject of the present letter.

The disease designed gout, is placed, as well as rheumatism, in the class pyrexia, order phlegmasia. In many of the appearances attending it, it shews a very near resemblance to rheumatism, inso-much, that on many occasions the difference is scarcely to be marked ; but one very material distinction which it pos-

esses, is that of being more a hereditary disease than rheumatism, and it exhibits an idiosyncrasy of a much more inveterate and morbid aspect. In what this very peculiar circumstance in the human frame consists, is one of the arcana of nature which remains undiscovered ; but if it is allowable to form a conjecture, I think the supposition here is well supported by the similarity of the phenomena of the two diseases,—that the constitutional idiosyncrasy, in gout, is only a greater, and, of course, a more morbid degree of the same idiosyncrasy which exists in rheumatism. Thus far is believed, that the seat of this idiosyncrasy is in the nervous system, and, being seated there, it is evidently also in form of a defect. In gouty constitutions, it seems to consist of something stamped on the original structure of that system, whereby the membranous parts of the body become susceptible of a morbid spasm-

dic affinity with the digestive organs, in preference to any other texture of muscular fibres. This action appearing first in the membranes of the extremities, but its power augmenting as life advances, it by degrees becomes more diffused in its effects ; and, during the decline of life, the predisposition increasing with increasing years, the membranes of all the other organs, in people of this constitution, become still more susceptible of sympathetic action ; being more easily influenced as vitality begins to decline, or as its energies are impaired by debilitating causes. In point of inveteracy, it differs from the rheumatic constitution in this respect, that, in the last, a rheumatic fever does not necessarily imply a return of the same at any after period, but with the remaining effects, perhaps, of stiffness of his joints, or thickened membranes, a person may pass his remaining life, and frequently does so, without any relapse ;

whereas a genuine gouty idiosyncrasy grows with advancing years, and is for ever ready to be brought into action from the excitement of numberless occurrences of common life.

Little as is known of the real nature of nervous influence, this much appears certain on the present occasion, that a mode of morbid nervous action is easily excited in a gouty person, which, in a man of seemingly equal tone of muscular fibre, but where this diathesis does not exist, would not take place from the same exciting cause ; therefore, in accounting for the appearances, or symptoms attending a fit of the gout, this susceptibility of the system is the circumstance to which our attention is in the first place called. But the gouty idiosyncrasy of the system is not indicated *a priori*, by any outward appearance, at least not with any degree of certainty ; it is therefore only to be discovered from

the effects of certain occasional causes, which, when applied to it, are productive of the phenomena of the disease in question. Admitting, then, the existence of this diathesis, the next object is to remark what these exciting causes in general are. A consideration of the appearances which precede, and mark the approaching paroxysm of gout, opens to us their nature. These appearances are always exhibited at first, under those of a deranged state of the functions of the stomach, such as flatulence and distension of the præcordia, the appetite impaired, but sometimes unnaturally keen, with furred tongue, thirst, and general languor, shewing that the functions of the stomach are disturbed, by the presence of those signs which usually point out something offensive being therein contained ; to these are added transient heats, and chillness, with a frequent pulse, shewing that the vascular system

is to a small degree excited, and that some gastric fever has already commenced. These symptoms are more or less perceptible for many days before a paroxysm comes on ; but at last the irritating contents of the stomach and intestines having acquired a higher degree of acrimony, by remaining in the primæ viæ, the sentient extremities of the nerves of that organ undergo a greater degree of stimulus, and a regular febrile paroxysm commences, attended by a morbid sympathetic spasm on a membranous part of the foot or hand ; and this quickly terminating in inflammation, as formerly observed, gives a supervening cause of fever and a secondary disease.

As it is unnecessary to enumerate minutely the various symptoms attending either a fit of regular gout, or the great variety of complaints which arise from its irregular form, these being supposed

known to you, I shall shortly offer this view of its pathology to your attention.

It consists, in the first place, of a peculiar predisposition, or morbid idiosyncrasy, of the nervous system, in consequence of which, certain irritating causes, when applied to the extremities of the nerves of particular parts, produce effects peculiar to that constitution, either on these organs directly, or indirectly on distant organs, by morbid sympathy, and different from what would be the result of the same irritation in a person who had no such peculiar idiosyncrasy. And secondly : Under a fit of gout, there is always present, in immediate action, an exciting or remote cause ; and which remote cause, there are very perceptible reasons for believing, consists of irritation within the digestive organs, arising from their vitiated contents ; but this vitiated state of the gastric fluids is a

natural result of morbid accumulations retained there, and which accumulations are frequently the consequence of obstructed perspiration, as also the effect of acrimonious injecta ; such as the excessive use of spirituous liquors ; by either of which the natural secretions into the stomach and intestines are greatly increased, and which, when retained there, necessarily become vitiated and irritating. By errors in diet also, either in excess of quantity, or the indigestible quality of food, acrimony in the *primæ viæ* is greatly augmented, from the obstruction which such errors present to the solvent and assimilating powers of the digestive organs. Such errors in diet are not unfrequent with gouty people, as that constitution is very commonly attended by a vitiated appetite, and morbid desire for high-seasoned and high-relished food, often of difficult digestion, thereby aug-

menting the quantity, and increasing the acrimony, of the contents of the stomach ; which combinations of acrid substances, applied to the nerves of the digestive organs, prove the chief exciting cause of all the phenomena attending this disease.

In contemplating the above premises, it is obvious that there appears no other demonstrable cause of vascular excitement, but that which, by unequivocal signs, is shewn to exist in the digestive organs ; therefore this unavoidable conclusion is likewise obvious, that the febrile paroxysm excited in the attack of a fit of gout must be viewed as real gastric fever ; and farther, that any other suppositious principle as inherent in the system, but which is undemonstrable as a primary agent, or remote cause of the disease, may fairly be esteemed as imaginary.

Considering the disease, then, in this

point of light, a person of gouty constitution, on the approach of a fit of regular gout, endures a degree of stomach derangement for a certain indefinite time, (or a latent period,) till at last he awakes in the night-time under a paroxysm of gastric fever ; but, from his peculiar diathesis, the same gastric irritation has also produced a painful sympathetic spasm on a membranous part of his foot. But it has been already remarked, as an axiom in diagnostic pathology, that when a tense membrane becomes the seat of sympathetic spasm, inflammation of that membrane quickly succeeds ; and accordingly, in the morning, some swelling appears on that part of the foot where the pain is seated, and a slight erythematous redness commonly shews itself on the surface, from the effect of the same morbid cause being, in some measure, communicated to the membranous integuments. The fit of pyrexia runs its course

till, after some hours, often a whole day, it is relieved by a gentle sweat breaking out ; and a deposition of a colourless fluid into the cellular membrane having, at the same time, taken place, gives some tumefaction, and a remission from pain. Thus the irritation arising from the obstructed capillary vessels being partly removed, and the breaking out of a gentle sweat having relieved the system from the exuberance of evolved caloric, two accessory causes of fever are thereby taken away, and a remission of pyrexia succeeds. But the remote cause still remaining in the *primæ viæ*, after an uncertain distance of time, the same routine again takes place ; and of a repetition of these, what is denominated a fit of the gout, is composed. These phenomena continue to be repeated until the acrimonious contents of the *primæ viæ* are either discharged, or have become altered and rendered mild, by the natu-

ral powers of digestion, aided by what help art may occasionally be able to afford. But this object being accomplished, the gouty symptoms disappear, and health is gradually restored, until a remote cause is again formed in the digestive organs, which, acting as before on the permanent predisposition, a fresh paroxysm is again produced.

At the commencement of the disease, its returns are generally at long intervals ; but, as life advances, the intervals become shorter, and the fits are of longer duration ; the natural reason of which appears to be this : First, that the idiosyncrasy or predisposition, of whatever nature that may be, seems to gain on the powers of life, and to predominate more as years increase ; and next, that the assimilating powers of the digestive organs become weakened as life advances ; or, perhaps, may have become prematurely so by debilitating habits.

The gastric, and other fluids of the *primæ viæ*, therefore, naturally becoming less active by the lapse of time, the whole contents of the canal are more imperfectly concocted, and, of course, more easily degenerate into a state of acrimony, calculated to give morbid irritation.

Under a gouty idiosyncrasy, there evidently subsists a primary morbid sympathetic affinity betwixt the *primæ viæ* and the membraneous parts of the body, and of these the ligaments of the small joints of the extremities are first in order; but as the disease advances with increasing general debility, the membranes surrounding the larger joints, the muscular parts, the viscera, and vital organs themselves, are all occasionally subjected to its effects. At this period of the disease the gouty pain is prone to shift its seat from one organ to another in an extraordinary manner, exhibiting a succession

of morbid sympathies, which are often hazardous. This shifting nature of the gouty pain appears, with high probability, to depend on an occasional change of place (or, perhaps, increased acrimony,) of the remote cause, within the stomach and intestinal canal, with which its corresponding effects, it is presumed, will also shift; changing to the place, or places, which sympathise most directly with the part to which the irritation is recently applied. I have observed reason to think, that, at the commencement of gout in early life, the irritating morbid matter is most commonly contained in the stomach and duodenum; and that, at after periods, the irritation becomes more extended in the intestinal canal, the morbid sympathetic effects in the system becoming also more diffused and general.

The above is the most usual form of gout, in those especially who are natu-

rally of an athletic habit ; but in those of a more lax fibre, as well as in the former after they have become debilitate, great irregularities take place ; and, in place of the morbid affection being exclusively confined to the extremities, there is no part or organ of the body exempted from its influence. These irregularities have been distinguished into atonic, retrocedent, and misplaced gout ; but this minuteness appears to be, in reality, of no material use in practice ; because, in whatever organ the gouty affection is seated, the method of cure must proceed on the same general principles, adopting such occasional means as may be suitable, should any new organic disease be formed under its influence.

Although, in an attack of regular gout, inflammation on the membranes of the extremities seems immediately to attend the sympathetic spasm, yet, on some oc-

asions, it appears that inflammation does not so immediately succeed ; this is demonstrated from some of the phenomena, and more particularly from the desultory nature of the irregular disease ; in which you see the painful affection, after having continued for a time, pass with rapidity from one part of the body to another, leaving the organ which it had occupied in a state of ease, and also passing from this second to a third situation with a similar relief. Now, this immediate relief from pain could not be experienced if the part affected was, at the time, in a state of real inflammation, as may be judged by the progress of recovery from inflammatory affections on other occasions ; seeing that, in these, the pain always subsides very gradually. The inference, therefore, to be made, is, that the shifting gouty pain is not at all times attended by local inflammation, but goes no farther than a state of pain.

ful spasm. That this is the case, is much corroborated from the circumstance,—that irregular gout is very frequently unattended by a febrile state; this probably arising from the absence of organic obstruction, as being necessary at the time, in addition to the gastric irritation, for the effect of pyrexia.

From the statement already made, you will observe, that the proximate cause of gout is understood as including two circumstances, viz. some kind of irritating matter contained in the *primæ viæ*, and that irritating matter acting upon a peculiarly morbid, nervous system; therefore it is reasonable to believe, that if either this morbid state of the nervous system could be altered to one more healthy, or if the irritating cause could be removed, that then the symptoms of the disease, which is the effect of their joint action, would disappear. But a constitutional diseased nervous system, it is a most difficult

matter, indeed, to act upon, so as materially to correct it, far less to alter it entirely to one more healthy. Although its inordinate movements may be soothed and moderated, yet the medical art has never yet shewn the means of entirely changing any form of original idiosyncrasy ; therefore we are left to try the accomplishment of the last of these intentions, as the ultimate object of our exertions ; but this, you will easily perceive, can only be done in a very gradual manner, and is to be accomplished by the combined assistance of plentiful dilution—by chemical mixture, when the nature of the contained acrimony can be discovered—and more especially by evacuations from the stomach and intestines.

But what is termed a fit of gout, is a diseased state, which is often of long duration, made up of many distinct febrile paroxysms and remissions, attended by pains in one or more of the joints, each

of which requires, while it lasts, a distinct consideration on its own account, in a similar manner as a feverish fit, from any other source ; therefore the first necessary attention required towards a person under a gouty febrile paroxysm, is an endeavour to shorten the duration of the present feverish fit as much as possible. This would, no doubt, be most effectually accomplished, by acting at once upon its primary cause, by exciting a free discharge of the offending contents of the stomach, &c. ; but under the height of a considerable febrile paroxysm, the disturbance which the operation of an emetic imposes is seldom advisable ; whereas we may, with perfect safety, attempt the abstraction of the two accessory causes of pyrexia, an accumulation of evolved caloric, and organic obstruction in the pained parts. The first of these objects is best and most safely accomplished in a gouty paroxysm by the use of those internal

medicines which most powerfully promote full perspiration, together with the cool air of a well-ventilated chamber ; seeing that these medicines have assuredly the effect of removing the stricture from the surface of the body, and thereby of the flow of increased secretions, into the stomach and intestines ; as well as that of relieving the system from the stimulating power of caloric, evolved from its latent state during the febrile process, and consequently of removing one accessory cause of fever. For this purpose, antimony, combined with opium, given in small doses, is eminently useful ; exhibited in the preparations of Vin. Antimon. and Tinct. Opii. accompanied with diluting drinks ; these, at the same time that they powerfully encourage free perspiration, have a sedative influence over the whole frame. The acetate of ammonia also, given in tepid drinks, is useful for the same purpose. With re-

gard to the other accessory cause, the organic obstruction, it is to be considered, that, in course of the feverish fit, a deposition into the cellular substance of the pained joint, with some degree of exudation from the surface of the parts affected, is generally observed to have taken place, accompanied with a mitigation of pain ; it is therefore reasonable to apply such means as we know will naturally tend to promote these purposes. Of this sort the tepid warmth of an emollient poultice, void of every kind of acrimony, is the most suitable ; or tepid emollient fomentations, covering the parts afterwards with warm flannel. To these may be added, topical bleeding with leeches, which occasionally have the effect of conferring sudden relief.

These two accessory causes of fever being thus removed, a remission of the febrile paroxysm takes place ; after which the most immediate object of considera-

tion is that of adopting such measures as are best calculated to moderate the violence of the succeeding fits, and, consequently, of shortening the general duration of the disease for the time. But it is evident, that, while the primary remote cause is permitted to remain in action within the digestive organs, renewals of the febrile fits, &c. must also be expected ; therefore, to take away this remote cause by clearing the intestinal canal from its vitiated contents, is evidently an object of the utmost importance ; and it is during a remission of pyrexia, that the efforts for this purpose can most advantageously be attempted. This intention is best accomplished by the use of antimonial emetics, assisted by laxative medicines ; of the last, calomel is the most efficient, and ought to form the chief basis of the measures taken for clearing the lower intestines, accompanied with the occasional use of

some saline purge. The tartarite of potass, in particular, as eminent for its sedative power in the system, while it acts as a powerful evacuant of the bowels, is extremely useful, as also phosphat of soda, especially when they are well diluted; which last is a circumstance of much importance, and ought to be regarded, through the whole process of the disease; as diluting the vitiated contents of the stomach, by drinking plentifully of fresh broths, gruels, or even tepid water, taken daily, renders their acrimony more easily conquered by the assimilating powers of digestion, as well as more moveable by evacuating medicines. The emetics may be repeated as often as shall appear needful for relieving the stomach and duodenum from their offending contents, as directed by the absence of the usual signs of their being in a loaded state; while the necessary discharge from the bowels should be made with moderation and

perseverance. As a general debility of the system has been observed to increase the predisposition to gout, it is therefore highly important to guard against this result, arising from the febrile state, as much as possible ; of course, while every article of sustenance of a heating nature is to be avoided, the patient's strength must be supported by a prudent supply of easily assimilated food of the mildest nature, with a moderate use of wine during the remissions of fever ; but every article of food which is difficult of digestion, which is naturally acrimonious, or has a tendency to become so, is improper.

I am your's, &c.

LETTER XIX.

DEAR —

ALTHOUGH an original morbid irritability of the nervous system, if it is at all susceptible of permanent correction, cannot be soon remedied, yet there are means of rendering it less sensible of the effects of morbid irritation for a short time ; and these means ought to be resorted to, under the pressure of gouty paroxysm. The means alluded to are, either that of sedative applications directly made to the part pained, or such internal remedies as have the effect of suspending the sensibility of the nervous system in general.

It is true, that the application of certain stimulating, as well as of sedative anti-spasmodics, when directly applied to

a muscular part under a state of spasm, will very often quickly remove it, and along with it every accompanying painful sensation. But if, under a fit of this constitutional disease, the gouty spasm on the extremities happens to be suddenly removed by such topical applications, as cold water, for instance, æther, blisters, &c. while the original irritating cause seated in the *primæ viæ* remains in active force, then it may happen that some other organ, which may be next in sympathetic affinity with the seat of irritation, will be affected with its influence; and if this shall happen to be any vital organ, the result may be fatal; on which account the internal use of such things as possess a general sedative power over the system are to be preferred; and for this purpose the soporific sedatives, as opium, have been found to be the most useful. An opiate may be administered every night to procure ease and repose.

With respect to these signs which indicate the necessary evacuations from the primæ viæ, it is needful to remark ; that when the stomach and duodenum are the principal seat of the offending contents of the primæ viæ, this always shows itself by the signs formerly pointed out ; especially by that of a parched mouth, and a furred state of the tongue. But if, from appearances, the stomach and duodenum shall not be much in fault, and the offending matter shall happen to be contained in the lower intestines, the signs of its presence are, in that case, more obscure, and are best to be judged of by the offensive and unhealthy appearance of the evacuations from the rectum ; when, if, in addition to the morbid state of the stools, the gouty symptoms continue in force, these together will generally form a sufficient indication that the remote cause is still in action within the intestines ; and you should proceed

accordingly. But the complete accomplishment of this object proves often tedious and uncertain, because cathartic medicines do frequently operate with sufficient enough power, and at the same time will leave the morbid contents, or part of the morbid contents, lurking in some recess of the intestines ; on which account the practice should be persevered in till the evacuations put on a healthy appearance. I have also observed, that, in gouty cases, the good effects arising from this practice are frequently not so immediate, nor so permanent, as in rheumatism ; as if it were, either that in the gouty diathesis the increased secretions collected within the canal are more considerable in quantity, or else that a smaller degree of irritation left remaining there, is sufficient to produce the morbid effects, than is required in the rheumatic constitution. I shall at present satisfy myself with offering you only two instances of

treatment under this disease, conducted on the above principle ; one of which is a case of irregular, and the other of a common paroxysm of regular gout.

On Sept. 19th, 1781, I was called to visit a lady, æt. 50, of a gouty family. She was affected with headache, weight at the precordia, furred tongue, general languor, heat, and frequent pulse ; had been complaining in this way for two days, though not confined to her bed.—*Cap. Emet. ex Antim. Tartar,*—et cras mane, *Cathartic ex Tartar. Potass 3 iij.*

Sept. 20. Discharged a great quantity of acrid fluid by the emetic, and the laxative dose produced several bilious stools ; headache and other symptoms somewhat relieved ; pulse continues frequent.

Sept. 21. Some swelling and erisipelas has appeared on her cheeks and forehead, with a return of headache ; her pulse the same.—*Repet. Emetic, u. a.*

Sept. 22. She has again vomited much

offensive fluid, mixed with bile, and is easier than yesterday ; the inflammation is also rather abated.—Repetit. Cathartic. u. a.

Sept. 30th. I did not see her again till this day. The erisipelas and headache entirely gone off—her pulse natural—but she is still very languid, with total want of appetite, and her tongue remains much furred.—Cap. Cathartic. u. a.

October 2d. Was attacked last night with a violent gouty pain and swelling on her left knee, attended with feverish heat and nausea.—℞ Mistur. Diaph. ʒ iv., Cap. ʒ ss. quat. in die.—Repetit. Cathart. u. a.

October 4th. A gouty swelling upon her foot and great toe, accompanied with great pain, and slight erithema on the surface, with much stomach nausea ; the pain of her knee rather easier, and her pulse at present natural.—Cap. Emetic. ex Antim. Tartar. u. a.

October 5th. Vomited a great quantity of bilious-coloured fluid, succeeded by several very offensive discharges from her bowels; the swelling on her foot much the same; her other knee has also become painful.—Cap. Pilul. Aper., No. ij. Quotid.

October 6th. She enjoyed some sleep last night; the pains, inflammation, and swelling are somewhat abated, and nausea less.—Contin. Pilul. Aperien.

October 9th. The gouty swellings, &c. are gone off, and she is able to walk across the room; her bowels have been preserved in a freely open state, by help of the pills, and her appetite is much mended, so that she is now taking some food, with a little wine.

October 22d. She suffered a relapse two days ago, I believe from an error in diet; has weight and pain in her stomach, with swelling and pain in one of

her hands.—Cap. Emetic. ex Antim. Tartar.—et cras mane, Cathartic. u. a.

October 24th. She again vomited a great quantity of acrid fluid, and is to-day much better; the pain and swelling of her hand diminished.—℞ Pilul. Aper. Cap. ij. Quotid. u. a.

Nov. 1st. The swelling, &c. entirely gone off; her tongue almost clean; she is able to take food, and is every way better.—℞ Amar. Stomach.

In reflecting on the above case, you will observe that a morbid sympathetic action very evidently subsisted betwixt the stomach and intestines, in an irritated state, and certain distant parts of the body; in the first place producing a gastric febrile state, and then, in consequence of a morbid sympathetic influence, seated on the parts, organic obstruction was established on the membranous integuments of the face, and in succession, on the knees, on the foot, and the hand, pro-

ducing pain and swelling on each, with some erithematous inflammation.

The existence of this connection is powerfully demonstrated by the relief which these organic affections evidently experienced, in consequence of the great discharge of acrimonious matter repeatedly thrown off from the *primæ viæ*, shewing thereby, that the irritation produced by it, within the digestive organs, formed the primary cause of these diseased phenomena, by the powerful law of morbid sympathy.

The other case is one of regular gout, and of a more recent date than the former; in which, although the duration was short, yet its severity, I am persuaded, might have been farther mitigated by the prudent use of an anodyne—a medicine which the person, from prejudice, totally rejected.

August 17th. A gentleman, æt. 68, of a gouty constitution, having formerly had

repeated attacks of the disease, was seized in the night time with a slight febrile paroxysm, attended with pain and swelling on his knee; had previously been affected with heartburn, parched and furred tongue, with distension at the præcordia. In this situation he had an emetic, followed by a laxative dose.

On the 19th he became easier, was able to walk about, and on the 20th he went from home.

August 26th. At his return to-day, his knee was severely pained and swelled, with slight redness upon the skin—his pulse 90; with general heat, furred tongue, bad taste, and sense of weight in his stomach.—℞ Antim. Tartar. gr. ij. Pulv. Ipec. gr. viij. aq. ft. ℥ i. m. ft. Emetic.

August 27th. Vomited a great quantity of acrid bilious fluid, and had a large discharge from his bowels; the pain and swelling on his knee much the same.—

Apply two leeches on the swelled part.
Cap. Pil. Laxat., No. iij. cras mane.

August 28th. The leeches bled freely ; he has rested well in the night ; the pain is somewhat abated—the swelling less.—
Repet. Pil. Laxat., No. iij. Quotid.

August 30th. Continues rather better. The pills move him once or twice every day—the discharges offensive ; to-day he has shifting pains in his hands. The sense of weight and distension at the præcordia, and parched state of his tongue, &c. although diminished, are still not removed—his pulse 80—skin cool.—Repet. Emet. u. a.

August 31st. What he vomited was less offensive than before ; the pain of his knee continues easier, and has shifted lower down to the head of the fibula ; his tongue and mouth more moist, and cleaner.—Contin. Pilul. Laxativ. u. a.

Sept. 1st. The pills operate freely—the discharges still offensive ; his complaints,

however, are gradually diminishing, and he is able to be out of bed.

Sept. 2d. His knee much relieved ; has some pain to-day, with a little swelling on one of his wrists.—Contin. Pil. Laxat.

Sept. 4th. Continues to recover—Is resting well in the night time ; the pain and swelling on both his knee and wrist nearly gone ; and he is acquiring an appetite for food.

Sept. 6th. Continues better, and is able to walk—his appetite for food almost restored.—Cont. Pil. Laxativ.

Sept. 12th. Recovered.

The London Medical Transactions contain a case of gout, given by Sir Samuel Pye, in 1753, of a Mr Rook, which I cannot help mentioning, as it is curious ; and although it is there explained on the visionary theory of humor pathology, yet you will easily perceive, that, in fact, it eminently displays the reality and truth

of the above ideas. Mr Rook was seized with a very severe paroxysm of gout in both feet ; and after suffering its violence for ten or twelve days, it suddenly flew as quick as lightning to the calves of his legs, leaving his feet entirely free from pain ; and, after a short stay there, it ascended with the same velocity to both his thighs, leaving the calves of his legs free from pain as before ; from his thighs, in the space of a minute, and as quick as formerly, it passed on to the abdomen, and from that to the stomach, upon which he vomited up more than a pint of green-coloured liquor, so corrosive to his feeling, that he compared it to strong mineral acid ; immediately after which he was relieved from pain, fell asleep, and waked in perfect ease ; he quickly recovered, and was walking about in two days. The same thing occurred to him twice afterwards, at distant periods.

Upon this occasion there cannot be a

conclusion more evident, than that all these severe pains, &c. sprung from the effects produced in his body by the corrosive fluid which he vomited from his stomach. It is also equally evident, from the circumstances, that these acrid contents of his stomach could influence his feet, and other distant parts of his body, by the action of morbid sympathy alone ; there existing no other demonstrable law of the animal economy, by the operation of which such effects could be produced ; and, at the same time, the severity of the disease, combined with the nature of the relief, serves to prove the power and occasional extent of its action.

I come now to take notice of the second general indication, which respects the necessary attentions to be paid by a gouty person, during the intervals between the fits, with the view either of preventing their return entirely, or of rendering their return less frequent and more moderate in their attacks.

It has already been said, that the pathology of gout consists in a morbid idiosyncrasy existing in the nervous system, acted on by stimulating matter lodged within, and irritating the nerves of the alimentary canal; and these, in a combined action, producing the phenomena peculiar to this disease, by an effect of this law of morbid sympathy. Upon entering on a prophylactic course then, and reasoning on this definition, it is evident that the great object must be to correct, in so far as it can be accomplished, the original constitutional defect; and, in the next place, to guard against the bad effects of indigestion, and the occasional accumulations of acrid matter in the digestive organs; this it is much more in our power to effect than the former, and is what every gouty person ought to study with the greatest care, to guard against the local effects of indigestion, and occasional accumulations of acrid matter in the digestive organs.

With regard to the purpose of correcting the defect of the original predisposition, it, in reality, is not known in what that defect consists ; it is only known, that it is somehow connected with the general tone of the system ; and consequently, in advising for this purpose, the general tone of the system is the only object to which we can direct our attention. For promoting this end, the internal use of the mild stomachic tinctures are much esteemed ; and such of these, especially, as are free from ingredients containing acrid essential oils, are the fittest ; chalybeats also, as being by much the most efficient tonics, are eminently useful, accompanied with bodily exercise, especially on foot, which is better adapted for calling forth a general muscular action than any other mode ; and, I believe, it is very certain that, by persevering in this plan, the great object of prevention will be better promoted than

by any other, provided always that the other object is attended to, at the same time, of preventing accumulations of acrid matter in the stomach and intestines ; by a prudent selection of food, especially by abstaining from excesses in eating and drinking, either in quantity or quality, the result of which is indigestion and acrimony, with its necessary consequences. With the same view also, costiveness, the ordinary defect of a gouty constitution, ought to be carefully avoided ; as, by permitting it to be habitual, the digestion is greatly impaired, and much acrimonious matter is retained in the intestines which ought naturally to be thrown out, but which, by being suffered to remain, tends greatly to increase irritation in the canal. This defect is best remedied by the use of an opening medicine, taken so as to preserve the bowels in a regular soft state ; for which purpose, aperient pills, of the least irritating

nature, are, in general, the most commodious.

Another circumstance, of high importance in prophylactic attentions, is the article of clothing; because, without the fullest attention to this important object, no person possessing a gouty constitution can expect to remain long in health. The general error lies in wearing too slender a defence against the influence of the atmospheric air upon the surface of the body in our variable climate. It does not appear that the economy of health is ever materially disturbed, merely by the occasional changes of temperature in the atmosphere in our climate, at any season of the year, through the medium of respiration. But when the surface of the body is too freely exposed to these vicissitudes, so as habitually to feel a painful sensation of cold, produced upon it through the ordinary clothing, the effects never fail to be bad, because

that extensive evacuation from the skin, of insensible perspiration, which is so necessary for the preservation of health, becomes thereby diminished ; and in consequence of this, the natural secretions which are poured into the whole internal cavities, especially into the stomach and intestines, are greatly increased in quantity, where, being accumulated, they soon become acrid, and may be productive of various diseases, even in those who are the most healthy ; but, in gouty constitutions, a fit of the disease is a most probable consequence ; and this, notwithstanding of every attention with respect to regimen, &c., which may have been bestowed.

The great rule to be observed on this point, is to preserve, as far as possible, an equal degree of natural warmth over the whole surface of the body, by covering it in such a manner as to prevent any unpleasant sensations from the penetrating

nature of the air, in its daily changes, while a person is merely walking abroad in it. This purpose is best fulfilled, in the first place, by a general flannel dress worn next the skin, which, being a less powerful conductor of heat than linen, tends powerfully to fulfil this intention, taking care, in the next place, that the upper clothing shall be such as will preserve a feeling of comfortable warmth, both on the trunk of the body, and on the extremities. The upper clothing may be varied in its degree, to correspond with the changes of the seasons, and may be varied with the greater safety if flannel is constantly retained next the skin. Indeed, in this northern climate, especially by those who have gouty constitutions, flannel ought at all times to be worn through the whole year. An yearly excursion to some watering place, for the use of an aperient chalybeate spring, will also contribute to the general pro-

phylactic purpose ; and, of such springs, those where the opening powers are so moderate as to admit of a considerable quantity of the water to be taken daily, are, on that account, preferable to those which prove laxative in a small quantity, on account of the dilution which is afforded by such to the acrid contents of the primæ viæ, contributing thereby to their more perfect expulsion. Occasional cold bathing, conducted with prudence, may also be of use ; but the practice is somewhat uncertain as to absolute safety, especially if the stomach is in any measure out of order, or if gouty pains are in the smallest degree present.

Upon the whole, the practical inferences which arise from the foregoing observations on the pathology of gout, are these :—In the first place, what experience has long ago established, that a person possessing a gouty idiosyncrasy, at all times when he is free from an im-

mediate attack of the disease, must, for the preservation of health and final safety, necessarily depend on a strict observance of regimen, habitually practising such attentions as will be conducive to strengthen the general tone of his system ; the tendency of which observances, is to lessen the susceptibility of the predisposition, and thereby to render it less amenable to the influence of such exciting causes as may be occasionally presented to it ;—and, in the next place, that, under a paroxysm of gout, the principal object of attention is to be directed towards the management of the contents of the digestive organs, because there will be discovered the remote or exciting cause of the fit ; and which cause being removed, the effects for the time will cease. I am so perfectly persuaded of this, as to say, that I believe no person ever recovers fully, at least I never saw it happen, from a fit of the gout, till the

accompanying disturbed state of the alimentary canal, pointed out by impaired appetite, furred tongue, thirst, and other signs of a loaded state of the primæ viæ, began in the first place to disappear; and to those have gradually succeeded, quiet nights, a clean tongue, and natural appetite for food, &c. shewing that the remote cause of the disease was either expelled, or rendered mild and inactive by the natural powers of digestion.

The above *ratio symptomatum*, and method of treatment founded upon it, has long been the rule of my private practice, although, from the prejudices of patients, &c. I have not always been able fully to follow it up. It was at first the result of remarks on the phenomena of the disease, particularly on the effects of occasional evacuations from the primæ viæ, aided by practical hints taken from the remarks of others, and viewed through the medium of the laws of morbid sym-

pathy. Time has hitherto served to confirm me in its truth, as founded on intelligible and demonstrable principles, independent of any imaginary agent ; it leads also to a practice the more steady and consistent, in guiding us in the application of our remedies, because it presents a defined practicable object to be attained, and a natural means of accomplishing that object.

I am your's, &c.

LETTER XX.

DEAR —

I SHALL finish what I wish farther to say on the subject of gout, with a few observations on its anomalous form ; and I presume you will readily perceive, that under irregular gout,—that is, where the pains, in place of being exclusively confined to the extremities, wander in a desultory manner from one organ of the body to another,—that the same general principles must be acted on ; and, in fact, are equally applicable in such cases, as they are when the disease is perfectly regular. Irregular gout is to be understood as comprehending all the varieties of these phenomena, which are by authors distinguished by the appellations

of retrocedent, misplaced, and atonic gout. But in these forms of the disease, especially in the two former, the particular treatment of each particular case must be directed by the form and degree of danger arising from the department of the body, and functions of the organs affected; more especially as these organs may happen to be affected only by painful spasm, or as that spasm, by its influence, may have produced organic obstruction,—an effect to which those of a plethoric habit of body are peculiarly liable. But here the general course to be pursued must necessarily remain much the same with that which is proper under paroxysms of regular gout; which is, to discharge the remote cause from the *primæ viæ*, by as vigorous measures as prudence will admit of. But as, in cases of internal gout, the evacuations by emetics may often be rendered unadvisable, from local circumstances of the organs affect-

ed, this object can then, of necessity, be prosecuted by the assistance of laxative medicines only.

In cases where gouty spasm is succeeded by local inflammation in the membranous organ of the stomach, of the intestines of the bladder of urine, or of the membranes lining cavities, &c. it has been observed, that the antiphlogistic treatment necessary in local inflammation from other causes, and in other constitutions, cannot here be safely applied to so great an extent, especially general bleeding; because, by inducing general debility, it tends to render the nervous system more susceptible of irritation, and consequently tends to increase the probability of farther danger; but, at the same time, the extent of this evacuation must necessarily be directed by the urgency of the case. It has been advised, in such a situation, to have recourse to the use of irritating applications, such as blisters or

sinapisms, to the extremities, in the hope of creating a change of place by this means, and of transferring the gouty affection from the viscera to these parts ; but this is a measure more to be desired than really to be commanded, its success being always very doubtful, if not entirely imaginary. When the accompanying vascular action is strong, bleeding from the general mass is decidedly needful ; but whenever the seat of pain may be supposed to be within the influence of topical bleeding, it is a much safer measure, as well as more immediately useful. Anodynes also, and warm fomentations on the surface of the body, immediately covering the seat of the pain, will contribute towards relief, and the accompanying increase of febrile heat is best mitigated by maintaining a copious perspiration ; at the same time, no relief can be depended on as permanent, so long as the original remote cause shall

be left remaining in action, within the digestive organs. But the most piteous of all states which attend this disease, occurs when the brain itself, and its membranes, become the sympathising organ ; for, on such occasions, the whole bodily frame is included in the effects of its morbid action, often exhibiting a state of delirium, mania, convulsions, and palsy ; and these symptoms have been observed to alternate, with a return of gouty pains and swellings, to the extremities.

Again, when the gouty spasm is seated on any of the muscles, on a portion of a muscle, or on its surrounding lax membrane, local inflammation does not so readily follow ; and, if it does follow, it is attended with less hazard, requiring to be treated in the same manner as when seated on the extremities. But if the gouty spasm occupies the muscular fibres of the great blood-vessels within the thorax, or of the heart itself, immediate death

is supposed to ensue ; and, indeed, it is presumable, that an affection of this sort is the most common cause of sudden death in gouty people.

In what is termed atonic gout, the painful sensations are most commonly of an anomalous nature, and shift from place to place, appearing, in general, to occupy the superficial parts of the body, as the tela cellulosa, and membranes of the muscles, often producing cramps in the muscles themselves. These pains are very perceptibly connected with a state of indigestion, and are often relieved even by a discharge of wind from the stomach. It is in these superficial spasmodic pains alone where topical applications have been apparently so beneficial, and in removing of which certain anti-spasmodic remedies have sometimes acquired so much celebrity when applied in this way, and where they are, in fact, most admissible ; because, when this form

of gouty spasm does change its place, it appears that it is seldom transferred to any vital organ. This state of safety, however, on such occasions, is not absolutely a certain thing ; as there are not wanting instances of individuals, who never experienced any thing beyond a slight atonic form of the disease, who have been occasionally affected with paroxysms of mental derangement, and which unfortunate state evidently alternated, with gouty pains in the arms and limbs.

I shall now proceed to offer you some remarks on a febrile disease, which I am induced to think is much assimilated to gout ; particularly as it is connected with a morbid state of the alimentary canal,—that is, Erisipelas ; not that it is exclusively attached to a gouty diathesis ; on the contrary, it is observed to occur in every kind of constitution. Some individuals there are, however, who are much more subject to its attacks than others ;

and in these, general atony, and habitual indigestion, are usually found to prevail.

It is obvious, that, in erisipelas as well as in gout, the attack is always preceded by a certain degree of stomach derangement, which, although not much remarked perhaps by the patient himself, yet, by a medical man, is easily perceived. It appears to be, from this gastric irritation, that a febrile paroxysm arises, which, in the space of a few hours, is attended with an inflamed spot on some part of the skin, of an indefinite extent ; but, in place of a few hours, it frequently enough happens that the febrile state continues for some days before the inflammation appears ; which inflammation is very perceptibly confined to the membranous integuments. The signs of stomach derangement, such as nausea, load at the præcordia, headache, thirst, furred tongue, having in the meantime increased in severity, attended by a continued quick

pulse ; when the disease is left to itself, without interference, the inflammation, after remaining stationary for some hours, is observed to spread in succession to the neighbouring parts, generally preceded by a renewal of slight chillness and succeeding heat. This progress the patient often learns to expect, by a sense of prickling on the adjacent skin which the inflammation is to occupy, and which soon after becomes red like the former. It continues to spread in this manner at intervals, till it has pervaded a large portion of the adjoining integuments, lessening on the parts which were first affected as it spreads along, and in the space of eight or ten days disappears altogether. The inflammation, at other times, appears in a succession of large detached spots.

If, now, you take a review of the circumstances attending the approach and progress of erisipelas, with the pathology

of morbid sympathy in your eye, you will quickly perceive, that the pyrexia with which it commences must be gastric fever, and that the succeeding erythema, from which it derives its name, is a supervening disease, arising from the continued action of the same cause with the fever ; being a state of inflammation formed on the membraneous integuments by a morbid sympathy of the affected parts, with an irritating cause seated within the alimentary canal.

That erisipelas is intimately connected with the state of the digestive organs, is clearly demonstrated, by the well-known fact of its appearing in various degrees on the skin, in consequence of certain kinds of food, as shell-fish, for instance, and nut-kernels, as well as other articles, having been taken into the stomach ; and this not only in too short a space of time after, to admit of the chyle impregnated by them to be taken into the circulation,

but while they as yet remained in the stomach ; and of the inflammation disappearing as soon as these contents were thrown off. A practice directed by this idea has afforded me every reason to believe that erisipelas is to be considered as a secondary disease, the result of a morbid sympathy, formed under gastric fever, betwixt the digestive organs and the extreme vessels of some part of the membraneous integuments of the surface of the body, and therein producing local inflammation, as happens in other membranes. The spontaneous subsiding of the disease, in cases where it has been entirely left to itself, most probably arises from the primary cause of irritation having become somehow abated in its virulence, either by being gradually rendered milder through the natural powers of digestion, and perhaps by being assisted in this by the dilution which a febrile thirst demands, or from the acrid contents ha-

ving been partly discharged from the bowels ; but, in such cases, the patient, when deprived of medical aid, generally remains long convalescent.

I first assumed this view of erisipelas from having been led to attend some cases of the disease, in which a loaded state of the stomach was so oppressive, that I was induced to exhibit an antimonial emetic ; but the effect of having thrown off a great quantity of very offensive contents mixed with bile, was, that next day the progress of the inflammation was abated, and what remained had lost its deep red colour, was softer to the touch, and the patient passed through the remaining disease with comparative ease. Farther experience has amply authorised the practice.

Directed by this pathology, you will observe, that the curative indications pointed out in erisipelas come to be, in reality, much the same as in a paroxysm

of gout ; namely, to remove the primary cause of fever, by the prudent use of emetic and cathartic medicines, repeated whilst signs of a loaded state of the alimentary canal continue to be present ; and, along with these, tepid fomentations applied to the parts inflamed. The beneficial effects, in particular, attending the practice of clearing away the vitiated contents of the stomach and duodenum, in erisipelas, you will find rendered very conspicuous, in visibly lessening pyrexia, as well as the inflamed state of the skin, and in checking its general progress.

When, in consequence of a local disease, the healthy action of a particular part of the body has become injured, as in the case of a wound, for instance, it has frequently happened that it thereby acquires a peculiar susceptibility of morbid sympathy with the digestive organs, should they happen to become deranged ; in consequence of which, erithematous

inflammation on the part is occasionally exhibited, or increased, if it already exists, whereby the recovery from wounds and ulcerated sores has sometimes been much retarded ; but from which morbid influence there is little hope of relief, independent of a complete clearance of the stomach and intestinal canal.

In the case of a gentleman, who has been for many years affected with an ulcer on his leg, this fact is well illustrated. Along with the ulcerated leg, he is at the same time subject to bilious accumulations in the primæ viæ ; but these accumulations seldom occur without producing a febrile paroxysm, attended by extensive erisipelas around the ulcer ; under the influence of which, he has occasionally laboured for two weeks at a time, but without any medical aid, farther than what he derived from some gentle aperient medicine to preserve his bowels soft. At last, when under one

of these feverish fits, he was persuaded to take, though reluctantly, an antimonial emetic, and even to repeat it, followed with a mercurial laxative ; by which means he threw off from his stomach a great quantity of offensive bilious fluid, after which the inflammation and fever very quickly abated. Since this time, as the ulcer on his leg still remains, and continuing still subject to bilious complaints, he has become aware of the approaching illness ; and being now convinced of the benefit attending this practice, he has, by seasonable evacuation, saved himself from many a fit of fever and erisipelas.

Had the following short case been left to itself, as, in erisipelas, often enough happens, it might have been protracted to many days of confinement ; and its having been so speedily checked, exhibits the benefit, in such cases, attending the early use of active remedies.

1809. Miss ——. *June 25th.* Has had a slight degree of erisipelas on her cheek for some days, attended with but little general uneasiness, till last night, when she had a regular febrile paroxysm; and this morning there appears a painful swelling, with erisipelas, upon her leg, around the ancle. She is hot, with headache, and thirst—her tongue furred, and pulse frequent.—℞ Emetic. ex Ant. Tartarin.

June 26th. Vomited a load of viscid phlegm, and some bile. She rested better through the night, and the pain and inflammation are both lessened.—℞ Cathart. ex Calomel, et Pulv. Jalapi.

June 30th. She has repeated the laxative dose, and is quite well.

Upon the whole, from the pathological views which the above premises present, you will observe a strong analogy to subsist betwixt the diseases of rheumatism, gout, and erisipelas, in respect

to their remote causes, in the nature of their febrile paroxysms, and in the means of relief indicated ; and that in the progress of erisipelas, in particular, as the organic obstruction or inflammation on the surface of the body is extensive, a favourable opportunity is presented of visibly remarking the link of combination betwixt the cause and its effect, exhibited by this effect produced on the surface of the body, becoming lessened, and quickly ceasing, in proportion to the abstraction of the primary cause contained within the digestive organs ; and this result being cognizable by the eye-sight, may be considered as amounting to a demonstration of its truth.

In prosecuting the intention of discharging an irritating cause of disease from the alimentary canal, I need scarcely observe to you, that this full effect can rarely be expected to follow the exhibition of one emetic, or one laxative dose

only ; because it is quite certain, that some part of the offending matter will often remain in the duodenum, or adhering in some recess of the intestines unmoved, while the ordinary discharges by the rectum are suffered to pass along ;— additional morbid secretions may also be collected anew ; therefore, the evacuations ought to be persevered in till the signs of irritation in the stomach shall disappear, and till the discharges from the rectum shall assume a healthy aspect, otherwise, the portion of vitiated matter which is retained, will assuredly tend to prolong the disease, and disappoint your expectations.

You will observe, that the foregoing diagnostic statements imply the supposition of a state of general health previous to the time of the febrile commencement ; and I have intentionally omitted taking notice of the share which the combination of any pre-existing visceral de-

rangement, plethora, inanition, or any general unhealthy state of the fluids, may have in stamping the measure of its morbidity, because it is my desire to fix your attention at present exclusively to the powerful agency of the morbid sympathies, as evidently exhibited in their pathology. With this view, I will here only remark to you the importance of studying to acquire the power of distinguishing the shades of difference which these circumstances impose on the character of febrile diseases ; seeing that on the possession of this capability greatly depends the power of adapting your remedies to particular cases, according to their peculiarities. This faculty of discrimination is only to be acquired by practical observation, together with the careful study of physiology, and of the hygiæna ; through a competent knowledge of which, you will be best enabled to distinguish when any organ shall have departed from a

state of health, and in how far the whole system is liable to be influenced by the impaired action of that part of the complex machine which has become defective.

I am your's, &c.

LETTER XXI.

DEAR ———

THE formidable disease, known under the appellation of angina pectoris, being supposed to be connected with a gouty diathesis, I will here offer to your attention what has occurred to me with respect to it.

With regard to the source of this disease, dissections have offered no certain information, nor discovered any organic disease within the thorax, which might be referred to as the direct cause of its symptoms, while the visible phenomena of its paroxysms have led, with great probability, to the opinion that it is of a spasmodic nature; but, as the individuals who are subject to its attacks, in

general, die so suddenly, it is of material consequence to determine where the spasm is seated, and more especially what may be the nature of its remote cause.

The general sensations, or symptoms, which constitute the phenomena of the disease, are a severe constrictive pain across the chest, apparently originating immediately under the sternum, communicating a severe painful sensation to one or both of the arms, about the middle part of the humerus, or at other times on the fore-arm, attended by a sense of strangulation within the breast, and accompanied by an irregular intermitting pulse. It attacks in fits, at very irregular intervals and durations, without any apparent cause; and, at other times, is easily excited, either by agitation of mind, or by muscular motion, as in walking quickly, especially after meals; on such occasions, the person is obliged to stop, as if to prevent immediate suffocation,

and, upon doing which, the stricture, in general, goes quickly off. It occasionally makes its attack in bed, and is often the immediate result of a recumbent posture at any time, obliging the person to start up to an erect position to prevent suffocation.

In the course of my own experience, I have seen but a few cases of this kind ; but, from my observation on these few, I have uniformly discovered, that, at the commencement of the disease, the digestive organs were in a loaded state ;—as also, from farther enquiry, that they had previously been so. But, from considering the strong disposition to sympathetic action which subsists, in some individuals, betwixt these organs and the heart, as well as other organs within the thorax, together with a general review of the predominant symptoms, I cannot avoid drawing this inference, that angina pectoris is a disease which, also, arises

from a morbid sympathy with a primary cause seated in the *primæ viæ*.

With respect to the particular seat of the spasm, there remains little doubt that it occupies either the heart itself, or the adjoining great blood-vessels, or perhaps both of these at the same time ; but from the fixed severe pain under the sternum, bearing a little to the left side, and at times quite across to the back, it is highly presumable that the mediastinum may be very materially included in the spasmodic affection, perhaps in a primary manner.

As to the reason why the vital organs within the thorax should be so immediately dependant on irritation in the *primæ viæ*, in those persons who are the subjects of angina pectoris, it is impossible to tell ; only thus far it has been remarked, and I think justly, that the subjects of this disease are those where a gouty or rheumatic diathesis has previ-

ously shewn itself; and it may also be considered, that the sudden deaths of many gouty men, occurring from what is believed to be spasm of the heart itself, coincides with the idea, that in gouty people there often, in reality, exists a peculiar predisposition towards a morbid sympathy of the thoracic viscera, with irritation in the digestive organs. Let me therefore recommend it to your careful attention to carry these views along with you, on the event of angina pectoris being at any time presented to your care, reflecting on the symptoms as they are to be explained by the pathology of morbid sympathy, and, in the meantime, I will offer you two cases in confirmation of its truth.

1777. *April 18th.* Mrs ———, æt. 50, complains of an intolerably severe stricture extending quite across her breast, attended by a severe pain under the middle of the sternum, which communicates

itself to both her arms in a violent manner, but confined to a spot about the middle of the humerus ; accompanied with a feeling of suffocation, and a most irregular, soft, intermitting pulse. In this state she continues for the space of ten or fifteen minutes, when the symptoms gradually abate, and she feels free from any complaint excepting weakness, her spirits being much exhausted. Her appetite for food is impaired, her tongue much furred, with thirst, bad taste in her mouth, weight at the præcordia, and restless nights ; her pulse, excepting when under the fit, is natural. She is of a spare habit, and subject to atonic rheumatism in her arms and limbs, and has been repeatedly affected with violent periodical headaches ;—she has been complaining in this way for some days. At first, the fits returned twice or thrice in the twenty-four hours, with unequal violence ; but she feels them increasing in frequency as

well as in violence, and now a recumbent posture is certain of producing one at any time.

She had, on some former occasion, been alarmed by the severe operation of an emetic, and I found, at present, that her aversion to it could not as yet be conquered. I was on that account left to the effect of laxatives alone, for the purpose of clearing out her stomach and bowels ;—these were accompanied with opiates, and a blister upon her breast. The first cathartic dose produced some bilious stools ; and a repetition of it every morning, with a powerful opiate three times daily, had the effect of mitigating the violence of the disease for a few days ; after which it returned with increased violence, both in the length and frequency of the fits, accompanied with faintness ; her pulse was extremely confused, and she described her feelings of anguish as intolerable. She had now been out of

bed for eight nights and days, because any attempt at a reclining posture was certain of producing a paroxysm ; on which account she was compelled to spend the whole of her time in her chair, and, notwithstanding of the opiates, she slept very little. I now at last prevailed on her to use an emetic, which she did on the 26th, of Tart. Ant., and discharged, easily, a great quantity of acrid bilious coloured fluid. On the succeeding night, she enjoyed more sleep, but still could not bear a lying posture. On the 27th, the fits less severe, and less frequent ;—she continues the opiates ; and on the 28th took a laxative dose. On the 29th relapsed, and took another emetic ;—threw up much bile, and was again relieved.

May 2d. Took another emetic yesterday, and has had no fit for twenty-four hours—can sleep in bed.

May 4th. Has had some slight returns

yesterday, and repeated the emetic ;—discharged more offensive bilious fluid, and is better.

May 10th. Continues better—her tongue is clean, and other signs of a loaded stomach, &c. gone off.

May 29th. Has been taking stomachic bitters, with the daily use of aperient pills ; and by the help of moderate exercise, and restorative diet, remains quite well. She had afterwards repeated slighter attacks of the same complaints, which were always removed by a discharge of offensive matter from the intestinal canal, procured by the same applications ; and died at last of another disease, in the year 1790.

1809. *July 25th.* Mr W. Y., æt. 50, and in general healthy, has for some days past complained of a feeling of excessive stricture across his breast, with great oppression of breathing, irregular pulse, and palpitation of his heart. This distress-

ing state attacks him at intervals, and continues for the space of fifteen minutes or thereby, when it gradually subsides ;—a lying posture always produces a fit ; on which account he is obliged to sit erect both night and day. He has no pain, and his pulse is natural, excepting in time of the fit. His tongue is furred, with bad taste in his mouth, and weight at the præcordia. He is not habitually subject to palpitations, and never was formerly affected in the same manner as at present.—℞ Emet. ex Tart. Antim. to be taken immediately, and a cathartic dose to-morrow morning. He discharged much acrid matter, mixed with bile, by the emetic ; and next day was considerably relieved. On the 27th, continued rather better—Repetit. Cathart. On the 28th, much the same as yesterday.—℞ Emetic, u. a. He again threw up a great quantity of acrid fluid. On the 29th,

quite free from complaint—Repetit. Cathartic, u. a.

This case is evidently of the same character as the former, only in a less degree of violence; although the distinguishing symptom of pain under the sternum, extending to the arms, was absent, yet the dangerous effect imposed on the vital organs, under the fit, was entirely of the same import, and the complaint removed by the same means.

The subject which I propose next to offer to your attention, is one which I consider as affording another important instance of morbid sympathy, included in its pathology. It is a disease fraught with danger, which has excited much speculation from medical men,—I mean Cynanche Trachealis, or Croup.

Croup is said to consist in an inflammation of the upper part of the trachea, the larynx, or glottis, affecting the mem-

branes or adjoining muscles. The progress of the disease, as the accompanying feelings have been described to me by such patients as were old enough to describe them, combined with what is perceptible by observation, is evidently this : The first approach exhibits only a slight, though at times a rough cough, very similar to that which accompanies a common cold, in a single cough, or two at a time ; by-and-by, the cough comes on in fits, and acquires a peculiar hoarse-croaking sound, while, in speaking, the voice remains quite clear. At this time there is observable a furred tongue, some thirst, weight at the præcordia, and impaired appetite ; the pulse becomes frequent, and the respiration, at times, somewhat confined and wheazing, especially in inspiration ; this is soon succeeded by a sense of stricture at the throat, especially in time of coughing ; or rather it is the sensation of a small tumor sticking in it.

These symptoms increase in violence, the respiration is more and more impeded, so as to deprive the patient of a moment's ease, excepting what happens now and then, in consequence of a severe fit of coughing having forced up a little tough membranous-looking mucus, which gives some mitigation of this miserable state for a few minutes, till at last he expires from real suffocation. Upon dissection, the glottis and trachea are found in an inflamed state, and the latter filled with a quantity of mucus, mixed with something like purulent matter; the inside of the tube, at the same time, covered with a glutinous coat of thickened mucus, slightly adhering to its membrane. In one case which I saw, this glutinous coat was wanting, but the cavity of the trachea, as well as the bronchiæ, was filled up with mucus and purulent-looking matter; the accumulation of which, in this disease, in addition to the stricture

of the glottis, appears with certainty to be the immediate cause of death, there being no appearance either of gangrene or abscess in the lungs.

The subjects of croup are most commonly children, under ten or twelve years of age; older people being seldom attacked by it. In your future practice, I desire you may notice, that, along with the very first appearance of the cough which afterwards terminates in croup, there are associated, decided signs of a diseased state of the digestive organs, which become more conspicuous as the disease advances; the cough being not catarrhous, but arising, as its only perceptible cause, from an action of morbid sympathy affecting the glottis, excited by irritation in the *primæ viæ*.

From a review of the above-stated progress of croup, and of the included *ratio symptomatum*, compared with the state of the parts exhibited on dissection, the

inference is, that the primary disease is gastric fever in a moderate degree, attended with a spasmodic affection of the glottis and epiglottis, arising from the effect of a morbid sympathy of these parts, with irritation within the digestive organs ; that, in consequence of the increased action of this sympathetic affection, or of its being extended to the membrane of the glottis, inflammation of that membrane is established ; forming thereby a secondary disease, which quickly extends to the trachea and bronchiæ, with all its consequences, destroying the action of the lungs by rendering them impervious.

In proceeding to contemplate the means of administering relief, and to check this distressing disease, the rule which ought to be invariably pursued, on all occasions, obviously presents itself as a guide ; namely, that whenever a primary cause is perceptible, your most vigorous efforts

must be directed towards its removal ; which being accomplished, the effect flowing from its action will necessarily disappear ; recollecting always, that on no occasion can you expect completely to carry off a secondary disease, while a primary cause of the whole remains in full action.

The indications of cure here, then, require to be formed upon a consideration of the state of the glottis and trachea, as connected with the state of the *primæ viæ* ; that of the pulse, and general febrile state at the beginning, affording little direction for procedure. Since, therefore, the affection of the glottis is so evidently derived from its connection with the *primæ viæ* in a diseased state by morbid sympathy, it is a reasonable inference, that the primary exertion ought to be made against the primary disease, namely, the gastric affection.

There are only two ways by which the

morbid spasm of the muscular fibre is to be relaxed ; either by removing the exciting cause, or by rendering the moving powers of the general system, or else of the particular part affected, insensible to its irritating nature. But, in so far as topical applications might be useful for this purpose, they are, in the case of infantine croup, from the seat of the disease, entirely impracticable ; and the only known means by which the other can be accomplished, is by the help of anodyne medicines, of which opium is the chief ; but, in the present case, there is a hazard lest, in consequence of its stupifying power, the whole nervous system may be rendered so torpid, as to make the intestinal canal less moveable by the necessary evacuating medicines, in consequence of which a great deal of time may be lost. On this principle also, the sedative powers of the warm bath is a fit application, and ought to be repeat-

edly used ; at the same time, I confess, I have not observed that it appears to afford any material relief. Therefore it is only left, in preference to every other object, to endeavour, at once, to throw off the irritating cause, by a full and free discharge from the stomach and bowels, at the earliest period possible. This can only be procured by the acts of vomiting and purging ; and, in a case of so much urgency and uncertainty, the result ought not to be entrusted to either of these evacuations alone, as it may be uncertain in what part of the digestive organs the offending matter may be chiefly lodged. For this purpose, antimonial emetics and mercurial laxatives are preferable to any other ; and indeed I believe these medicines to be the most efficient means hitherto known of speedily and effectually accomplishing, on any occasion, this important object. I know that, with some medical men, an aver-

sion exists to the free use of emetics. I think it is unreasonable and unfounded, as I have formerly observed to you ; for my own part, I have witnessed much good, but I never saw any bad effects, from the operation of an emetic, excepting what arose from some sort of mismanagement. You know I make frequent use of them in practice ; and while I find, on so many occasions, that I can administer more immediate and certain relief to my patient by this means than by any other measure, I am called upon not to withhold it, from the apprehensions of other people. But in no disease has a free discharge by vomiting exhibited more decided benefit than in croup ; and in incipient croup, the relief is almost immediate.

As the imminent danger attending this disease arises from its passing into an inflammatory state, the greatest vigilance is required in preventing that issue,

by attending to the first symptoms of its approach ; and when this attention is paid at any period, short of the inflammatory stage being established, the success is almost certain. This attention consists, as has been said, by free evacuations from the stomach and intestines, prosecuted with the utmost care and perseverance ; first, by the use of antimonial emetics, which sometimes evacuate the lower intestines also, on which occasions the recovery has been very rapid, giving a demonstrative proof that a cause of disease was removed, and of the truth attending this pathology. But this effectual discharge, from an emetic, does not generally happen, therefore laxatives are required ; and of these, the laxative medicines which give a powerful and extensive stimulus to the intestines, answer best. Calomel, in large doses, attended with some of the saline purges, are decidedly the fittest ; but the bulky nature,

and nauseous taste of the last, render them unfit for children, who constantly reject their use ; of course we are, with such patients, limited to the use of calomel alone as a purgative, in cases of croup ; and of this it sometimes requires a great quantity to give a full effect. But this defect is greatly to be corrected, by adding a small quantity of Ant. Tartar., such as $\frac{1}{4}$, or even $\frac{1}{8}$, of a grain, to each dose of calomel, to be given at regular intervals, till a plentiful discharge from the rectum is procured ; which discharge ought to be kept up till the offensive state of the stools shall disappear ; upon which, if the stomach has been previously cleared, and inflammation not commenced, the stricture in breathing, cough, and other symptoms attending croup, become quickly abated, shewing that the spasm on the glottis is taken off ; and the patient recovers.

But if, before this happy relief takes

place, the disease shall have passed forward to the inflammatory stage, the febrile state then becomes augmented, in consequence of an accessory cause of fever, organic inflammation, having supervened, and the prospect of recovery is in proportion lessened. The increased danger arises, not so immediately from the hazard of a succeeding suppuration or gangrene, as from an aggravation of all the former symptoms, by an increased deposition of mucus, &c. into the branches of the trachea, creating an impervious state of the lungs, which the stricture of the glottis prevents the cough from throwing off. Under this secondary disease of membranous inflammation of the glottis, and its covering the epiglottis, in children, I have not observed what is understood by an antiphlogistic course to be of any material service ; general bleeding appears to be of little use, farther than in relieving the

lungs, in some measure, by lessening the mass of blood to be circulated through them in their loaded state ; and the tracheal erithema is probably too deep seated to be within the influence of topical bleeding from the surface of the neck ; yet it appears very reasonable to take the chance of benefit from both of these, as well as blisters applied to the throat, to which some powdered opium may be added, as coadjutors to the above discharge ; which discharge you have already seen so useful of itself, on other occasions, in lessening local inflammation from morbid sympathy, by clearing away its primary cause. But on no occasion are the beneficial effects of this more conspicuous than in croup, and its early accomplishment is the more important, because, in infantine croup, after the inflammatory crust is fully formed within the trachea, the event generally proves fatal.

This is the form and progress of the disease, in so far as it has come under my notice ; and I do not recollect any attack of croup in children which could be distinguished as a primary inflammatory disease. In adults, however, the case is otherwise ; in them the cynanche trachealis, in any cases which I have met with, appeared to be a primary inflammation of the membrane of the glottis, accompanying an extensive catarrhus affection of the fauces ; and exhibiting, at once, all the phenomena of constant severe croaking cough, and restricted perspiration, similar to the last stage of infantine croup, attended by a febrile state.

In this situation the most immediate relief is received from large general bleedings, blisters to the throat, and warm fomentations to the fauces, by means of an inhaler ; accompanied by powerful laxatives, as in other acute inflammatory dis-

eases. The croup in adults, however, seldom occurs ; and when it does, the suddenness and severity of the attack necessarily call for immediate assistance ; and when this is given with promptness, there is reason to believe that the patients generally recover.

I flatter myself, my dear ——, that the above observations, combined with what you have had the opportunity of seeing verified in practice with respect to them, will serve to demonstrate to you, and impress your mind with such natural reasons for the morbid appearances pointed out, as will relieve you from the necessity of resorting to any abstract or visionary principle for their explanation ; and that their whole scene of morbidity consists of effects derived from the excitement of peculiar causes, exhibited by the exercise of the laws of morbid sympathy ; and also that, by a careful reflection on the operation of

these laws, you will, on many other occasions, perceive much of the obscurity attending on the rationale of morbid phenomena to be greatly diminished.

I am your's, &c.

THE END.

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